SERVICE MANUAL





TVL-151M
TVL-201M

- Contents -

1. Detail Specification

1-1. LCD Panel

- LG-Philips LCD Panel : LC151X01-A3 : 15.1"(Panel Link Type)
  LC201V1-A3 : 20.1"

1-2. In/Out Jack

- Power Supply Input : Din Jack
- Antenna Input : 75ohm Unbalanced Din-Jack Type
- PC Input : 15pin D-sub Jack (Female Type)
- PC Audio Input : Phone Jack (Stereo Type)
- Composite Video In : RCA Jack
- DVD In : RCA Jack (Y, Cb, Cr) - * 20.1" Model Only
- S-Video In
- Audio Input : RCA Jack (When Composite or S-Video input)
- EURO SCART Jack
- Head-Phone Output Jack : Phone Jack (When the Jack insert, Main Sound is mute.)
- Audio Out : RCA Jack (Monitor Out)
- Video Out : RCA Jack (Monitor Out)

1-3. User Interface

- ▣ 7 Panel Key
  - ☞ Power , Menu , Select , Vol Up , Vol Down , CH Up , CH Down
- ▣ 3 Color LED
  - ☞ Red : Stand by Condition
  - ☞ Green : Power On Condition
  - ☞ Scarlet : SLEEP TIME On Condition
  - ☞ Green Blink : When the PC Mode, Inserted D-sub Jack but H,V Sync is not input or PC Power Save Mode
- ▣ Remocon Receiver
  - ☞ Remocon (Pal ; 41Key, NTSC ; 29Key)
- ▣ On Screen Display
  - ☞ Control using OSD
  - ☞ OSD Language : English, German, Italian etc.
- ▣ Plug & Play : DDC - 1/2B
- ▣ Factory Mode
  - ☞ Mode for controlling the adjustment item & Panel Option in mass production

1-4. Electrical Specification

- ▣ TV Color Standard : PAL,SECAM (NTSC System : NTSC)
- ▣ TV Sound Standard : B/G,I,D/K (NTSC System : M)
- ▣ TV Stereo Sound : NICAM Stereo , A2 Stereo (NTSC System : BTSC)
- ▣ TV Receiving Range : VHF LOW(2 ~ H), VHF-HIGH(I ~ W+26),
  UHF (W+27~78)
  Total 100CH (NTSC System : 181CH)
- ▣ Sound Output : RMS 1.5W X 2CH
- ▣ Power Supply : AC / DC Adaptor (DC12V , 5A , 50 /60 HZ)
  - ☞ Input Power : AC 100V ~ 265V
  - ☞ Power Consumption : Stand-by : 3W , Power On : 45W
- ▣ Video Input Level : 1 Vp_p , 75 ohm
- ▣ Audio Input Level : 500mVrms
- ▣ PC Input Level : Analog RGB Input (H,V Separator)
  - ☞ See 1-5. Available PC Input Mode & Video Timing Standard.
- ▣ Audio Output Level : 500mVrms
- ▣ Head-Phone Output Level : 100mW

1-5. Available PC Input Mode & Video Timing Standard

	Resolution		Horizontal		Vertical		Clock	Time	Remarks
	H	V	(KHz)	Pol.	(Hz)	Pol.	(MHz)	(nsec)	
IBM	640	350	31.469	P	70.087	N	25.175	39.722	VGA
IBM	640	480	31.469	N	59.940	N	25.175	39.722	
VESA	640	480	37.861	N	72.809	N	31.500	31.746	
VESA	640	480	37.500	N	75.000	N	31.500	31.746	
VESA	640	480	43.269	N	85.008	N	36.000	27.778	
IBM	720	400	31.465	N	70.087	P	28.322	35.308	
VESA	800	600	31.156	N/P	56.250	N/P	36.000	27.778	SVGA
VESA	800	600	37.879	P	60.317	P	40.000	25.000	
VESA	800	600	48.077	P	72.188	P	50.000	20.000	
VESA	800	600	48.875	P	75.000	P	49.500	20.202	
VESA	800	600	53.674	P	85.061	P	56.250	17.778	
VESA	1024	768	48.363	N	60.004	N	65.000	15.358	XGA
VESA	1024	768	56.476	N	70.069	N	75.000	13.333	
VESA	1024	768	60.023	P	75.029	P	78.750	12.698	
VESA	1024	768	68.677	P	84.997	P	94.500	10.582	

1-6. OSD Specification

▣ PICTURE

◎ CONTRAST

◎ BRIGHTNESS

◎ COLOR TEMPERAT (PC input mode only)

※ STANDARD , 6500K , USER, RESET , 9300K

◎ SHARPNESS (Not Available PC MODE)

◎ COLOR (Not Available PC MODE)

◎ TINT (NTSC System Only)

▣ SOUND

◎ BASS

◎ TREBLE

◎ BALANCE

◎ MTS (S.MODE)

▣ GEOMETRY (PC input mode only)

◎ H-POSITION

◎ V-POSITION

◎ AUTO POSITION

▣ FUNCTION

◎ TRACKING (PC input mode only)
※ AUTO TRACKING
※ CLOCK
※ PHASE

◎ INFORMATION

◎ TUNING (TV input mode only)
※ SORT
※ AUTO TUNING
※ MANUAL TUNING
※ FINE TUNING
※ CH SKIP

◎ LANGUAGE (PAL/SECAM System)

◎ CAPTION (NTSC System)

◎ V-CHIP (NTSC System)

1-8. Factory Mode OSD Specification

▣ How to use Factory Mode

◎ Press Power & Select Key in Panel Control key, and go to Factory mode.

▣ Factory ADJ

◎ CLOCK DELAY
◎ AUTO COLOR GAIN
◎ OPTION
◎ TTX LOCAL
◎ TTX E/W

▣ MX88L281 1

▣ AD9884 1 (PC input mode only)

▣ AD9884 2 (PC input mode only)

◎ SUB C VCP
◎ SUB C CHG CURRENT
◎ INIT VCO CURRENT

▣ VPC3230 (excluding PC MODE)

◎ CONTRAST
◎ BRIGHTNESS
◎ PEAKING
◎ CIP CONTRAST
◎ CIP BRIGHT

** In mass production, adjust only Factory ADJ item, do not adjust other Modes.
(In the time of variation of A/S & initial condition of screen quality , built in other Modes for controlling)

2. Adjustment Instruction (Factory ADJ)

2-1. Adjustment instruction of CLOCK DELAY

1. Adjustment item : Adjust the dispersion happening in the time of matching ASSY-MAIN and LCD PANEL .
   (As the contact status of the CONNCETOR for connecting LCD PANEL, dispersion happens)

2. Adjustment Process : After assembling the SET , do the adjustment.

3. Preliminary adjustment :
   1) Connect the outlet VIDEO PATTERN GENERATOR (ANALOG RGB & SEPARATE H,V OUT) to INPUT (15PIN D-sub with VGA CABLE)
   2) TEST PATTERN: 1DOT BLACK, Select WHITE PATTERN.
      (In the case of the tool of MSPG-925L, select PATTERN NO.28)
   3) Select Output FORMAT into 1024 x 768 @85HZ. (Select MODEL : 21)
   4) Turn on the SET, and them select in PC MODE.

4. Adjustment Instruction :
   1) Press SEL & Power Key in Front panel at the same time , go to Factory mode
   2) Select CLOCK DELAY (including in FACTORY ADJ MENU) with CH UP/DOWN KEY in Factory mode
   3) Changing the level of CLOCK DELAY with VOL UP/DOWN KEY, adjust to the noiseless level in screen (variable range : 0 ~ 15, DEFAULT : 15)

2-2. Adjustment Instruction of AUTO COLOR GAIN

1. Adjustment Item : Function of automatically setting ADC LEVEL of AD9884 with ANALOG RGB (D-sub) signal .
(WHITE BALANCE & CONTRAST adjustment)

2. Adjustment Process : After assembling the SET , do the adjustment .

3. Preliminary Adjustment
: 1) Connect Outlet of VIDEO PATTERN GENERATOR to the input terminal of CVBS.
2) TEST PATTERN : Select COLOR BAR PATTERN
3) Turn on the SET, and then select in VIDEO MODE.

4. Adjustment Instruction
: 1) Press SEL & Power Key in Front Panel at the same time, and go to Factory mode.
2) In Factory mode, select Auto Color Gain in Factory ADJ.
3) Press VOL UP KEY , and then displaying the phrase " Processing " , AUTO Adjustment start
4) When adjustment is completed , the phrase " Processing " disappears
=> caution : In the course of Processing, do not remove the signal.

2-3. Setting Instruction for OPTION

1. OPTION : - X2 - BYPASS
   => Using 6 BIT PANEL
   => Back-Light Control of Inverter
   (Bright Max : LOW , Min : HIGH)

2. OPTION : - X2 - INVERT
   => Using 6 BIT PANEL
   => Back-Light Control of Inverter voltage polarity
   (Bright Max : HIGH , Min : LOW)

3. OPTION : - X3 - BYPASS
   => Using 8 BIT PANEL
   => Back-Light Control of Inverter voltage polarity
   (Bright Max : LOW , Min : HIGH)

4. OPTION : - X3 - INVERT
   => Using 8 BIT PANEL
   => Back-Light Control of Inverter voltage polarity
   (Bright Max : HIGH , Min : LOW)

※ Select no 4 in the case that no 4 is not selected .

2-4. Adjustment Instruction of VPC3230

1. Adjustment item : Function of adjusting DEFAULT VALUE of VPC3230 DEVICE.

2. Adjustment process : After assembling the SET, do the adjustment .

3. Preliminary adjustment
   : 1) Connect Outlet of VIDEO PATTERN GENERATOR to the input terminal of CVBS.
   2) TEST PATTERN : Select COLOR BAR PATTERN
   3) Turn on the SET, and then select in VIDEO MODE.

4. Adjustment Instruction
   : 1) Press SEL & Power Key in Front Panel at the same time , and go to Factory mode.
   2) Select VPC3230 in Factory mode.
   3) Adjust to the following levels with VOLUME UP/DOWN, CH UP/DOWN
      - CONTRAST 52
      - BRIGHT 9
      - PEAKING 0
      - CIP CONTRAST 7
      - CIP BRIGHT 7

※ No need to adjust when the SET is stable.

3. Inspection Specification

3-1. Input Specification of LCD PANEL (Total Inspection)

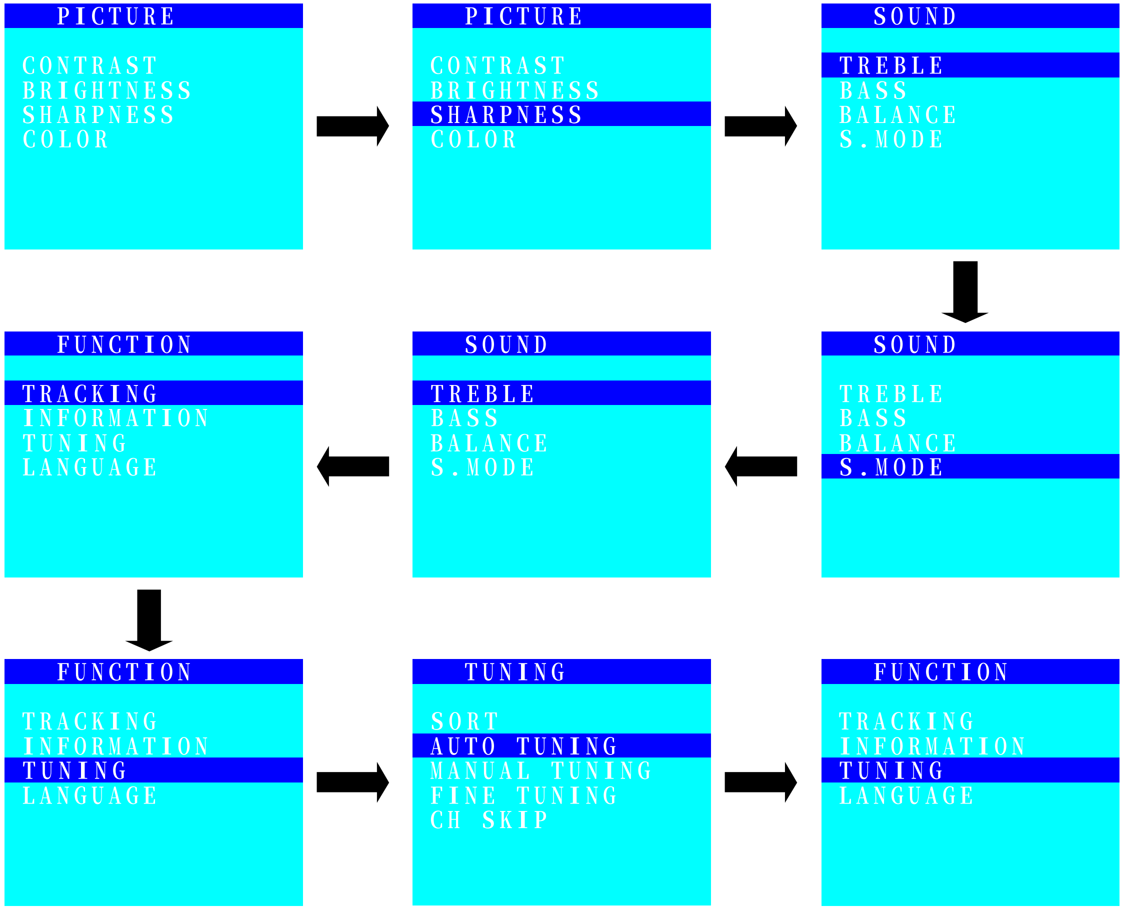
	Inspection Procedure	Standard	Remark
1	Turn off the power of JIG (check the power of JIG)		
2	Connect BACK LIGHT CONNECTOR of LCD PANEL to JIG		
3	Connect PANEL Connector of JIG to LCD PANEL		
4	Turn on the power of JIG → POWER ON		
5	After receiving Black Pattern, check the number of radiant Pixel	No the matter	
6	After receiving White Pattern, check the number of radiantless Pixel	2 Pixel and less	
7	After receiving White Pattern, check the spots	No the matter	
8	Turn off the power of JIG		
9	Disconnect PANEL Connector		
10	Disconnect Back Light Connector		
RMK	1) In order to prevent the spots of PANEL, inspect with Gloves on 2) In the time of connecting & disconnecting the Connector, surely turn off the power of JIG, and then go on the inspection. 3) Test Pattern : Full White & Full Black Pattern		

3-2. Inspection Specification of INVERTOR (Total inspection)

	Insepction procedure	Standard	비 고
1	Turn off the power of JIG (check the power of JIG)		
2	Connect 2P CONNECTOR in the upper part of JIG to CN3		Back-Light Con'
3	Connect 2P CONNECTOR in the lower part of JIG to CN2		Back-Light Con'
4	Connect 5P CONNECTOR of JIG to CN1		Inverter Con'
5	Turn on the power of JIG → POWER ON		
6	Check the screen is displaying normally		
7	Change " Brightness" and check the variation of brightness level		
8	Turn off the power of JIG		
9	Disconnect the Connector		
RMK	1) TEST PATTERN : White / Black Pattern 2) In the time of connection & disconnection the CONNECTOR, surely turn off the power of JIG , and then go on inspection => warning : pay attention to high voltage		

3-3. Inspection specification of ASSY-CONTROL

	Inspection procedure	standard	Remark
1	Turn off the power of JIG (check the power of JIG)		
2	Connect 7P Connector with JIG		
3	Check the tight insertion of TACT SW	Tight insertion	
4	Turn on the power of JIG.		
5	Check the color of LED is red	STAND BY : RED LED	
6	Press POWER KEY , and then check the screen is displaying & LED is lighting in green .	POWER ON : GREEN LED	
7	Press each KEY and check the function	CHECK key SW	
8	With REMOTECON , turn off the power	Check REF LED	
9	Turn off the power of the JIG		
10	Disconnect the Connector		
RMK	1) After checking the connecting status of 15PIN in JIG , go on the inspection : in case of no sign , KEY may not work .		

Operating procedure	OSD specification
1. POWER KEY setting 2. MENU KEY setting 3. SELECT KEY setting 4. ◀ KEY setting 5. ▶ KEY setting 6. ▼ KEY setting 7. ▲ KEY settinh	=> POWER ON 

3-4. INSPECTION SPECIFICATION OF ASSY-MAIN

3-4-1 INSPECTION IN TV MODE

1. Required tool : PM5518 (RF PATTERN GENERATOR – built in SAP function) , simple JIG
2. Preliminary inspection : 1) set up PM5518 : RF FREQ' : 55.25MHZ ,
   PATTERN : COLOR BAR ,SOUND : STEREO (3KHZ/1KHZ),
   SYSTEM : PAL/NTSC - 6 (REAR PANEL) RF GAIN :60dBuV
3. Inspection procedure :
   1) Inserting Connector
   2) Power on the JIG , POWER ON the Set.
   3) TUNING (in case of NTSC, select channel 2, in case of PAL/SECAM , AUTO TUNING
   : select the stored channel .
   4) Check COLOR & the sound of SPEAKER (L : 3KHZ , R : 1KHZ)
   5) Changing VOLUME , check up & down of sound (VOLUME 0 : MUTE , others : LEVEL up & down)
   6) With MUTE KEY of REMOCON , Check MUTE function
   7) With MTS KEY of REMOCON, after converting to MONO, check SOUND
   8) When converting " CONTRAST" in PICTURE MENU , check the conversion of light & darkness in screen
   9) When converting " BRIGHTNESS" of PICTURE MENU , check the conversion of brightness in screen
   10) When converting " COLOR" of PICTURE MENU, check COLOR GAINING (0 : NO COLOR)
   11) In the time of change " TINT" in PICTURE MENU , check COLOR VARIATION.
   12) With P.STD KEY of REMOCON , check the conversion of the Screen
   13) With S.STD KEY of REMOCON , check the conversion of the Sound
   14) With SURROUND KEY of REMOCON, check the conversion of the Sound
   15) Convert to STAND BY MODE.
   16) Power off the JIG , and then disconnect JACK & CONNECTOR.

3-4-2. Inspection item in VIDEO MODE

1. Required tool; : PM5518 (PATTERN GENERATOR) , VTR (NTSC) , SCOPE , 간이 JIG1 ,

2. Preliminary item : 1) set up PM5518 : RF FREQ' :55.25MHZ , PATTERN : COLOR BAR ,
SOUND : STEREO (3KHZ/1KHZ)
SYSTEM : PAL/NTSC - 6 (REAR PANEL) RF GAIN : 60dBuV

3. Insepction procedure :
1) Inserting Connector
2) Power on JIG , and then POWER ON the set. (Check the color of LED : GREEN)
3) Inserting RCA-JACK BLOCK S-VHS JACK & PC AUDIO JACK.
4) After converting to VIDEO MODE , check the screen & Sound .
5) In the screen of SCOPE check that the output is L : 3KHZ , R : 1KHZ
6) With S.MODE KEY of Remote control , after converting to MONO , check the SOUND (L /R :3KHZ)
7) After converting to S-VIDEO MODE , check the screen & SOUND
8) After converting PC MODE, check the output of PC AUDIO
9) After inserting SCART CABLE
10) After converting to STAND BY MODE, check the color of LED (LED color : RED)
11) Power off JIG , and then disconnect JACK & CONNECTOR

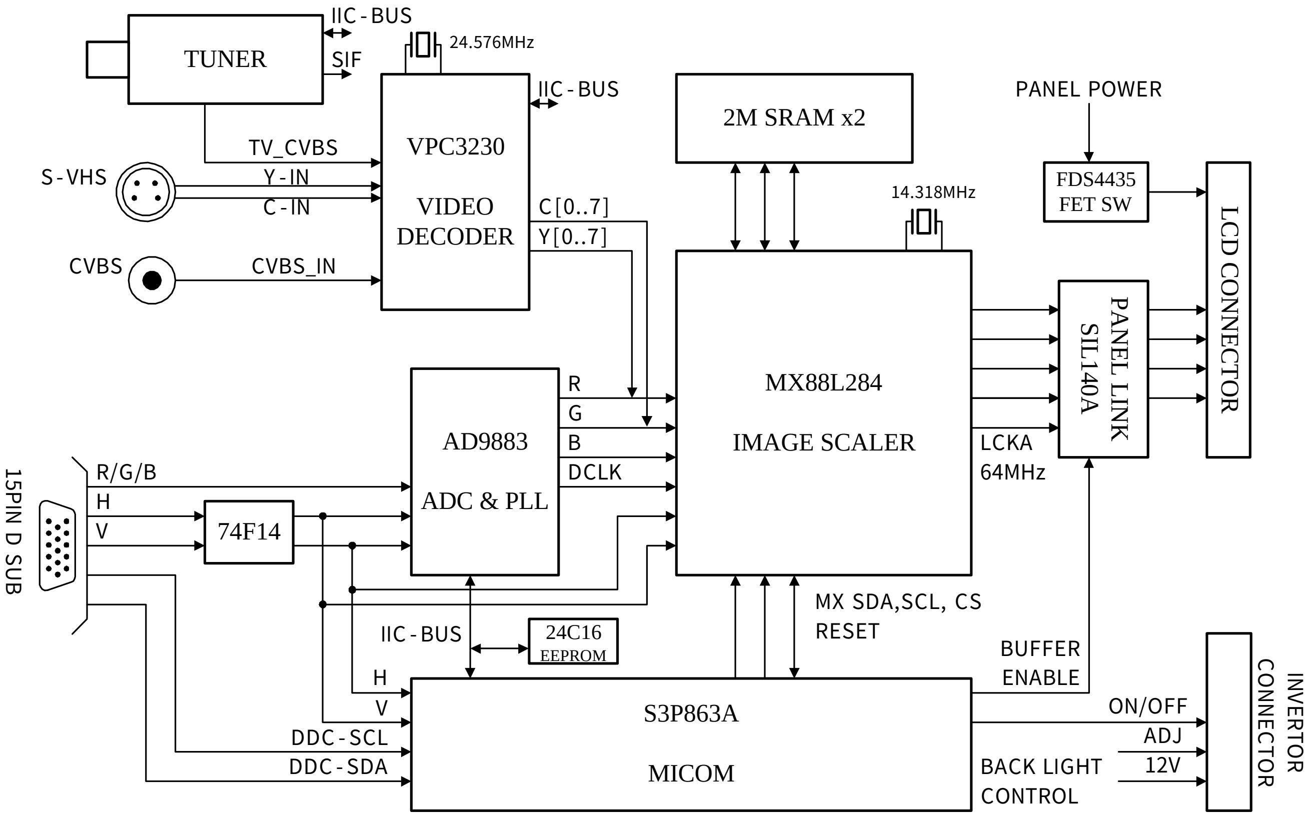
3-4-3. Inspection in PC MODE

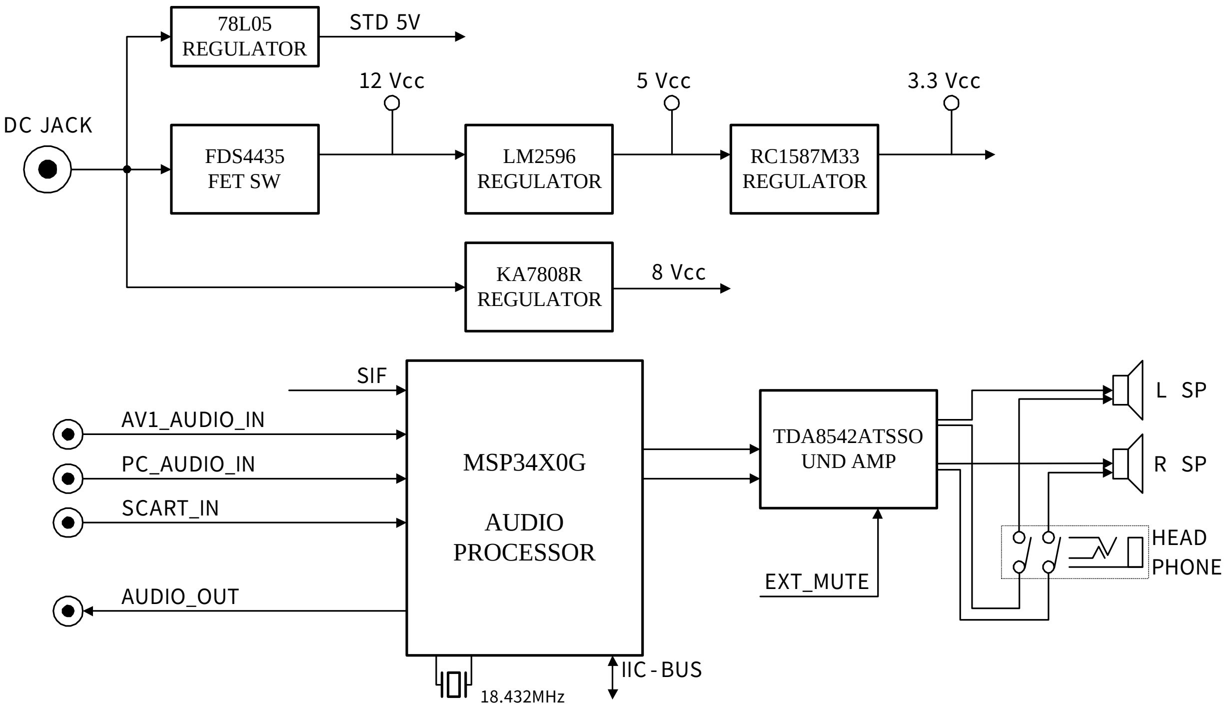
1. Inspection item : in each MODE setting PC , inspect the status

2. Preliminary item : 1) MSPG-925L Setting
   - Pattern : Select 1DOT W/BLACK (PATTERN NO : 28 , MODEL NO.: 21)

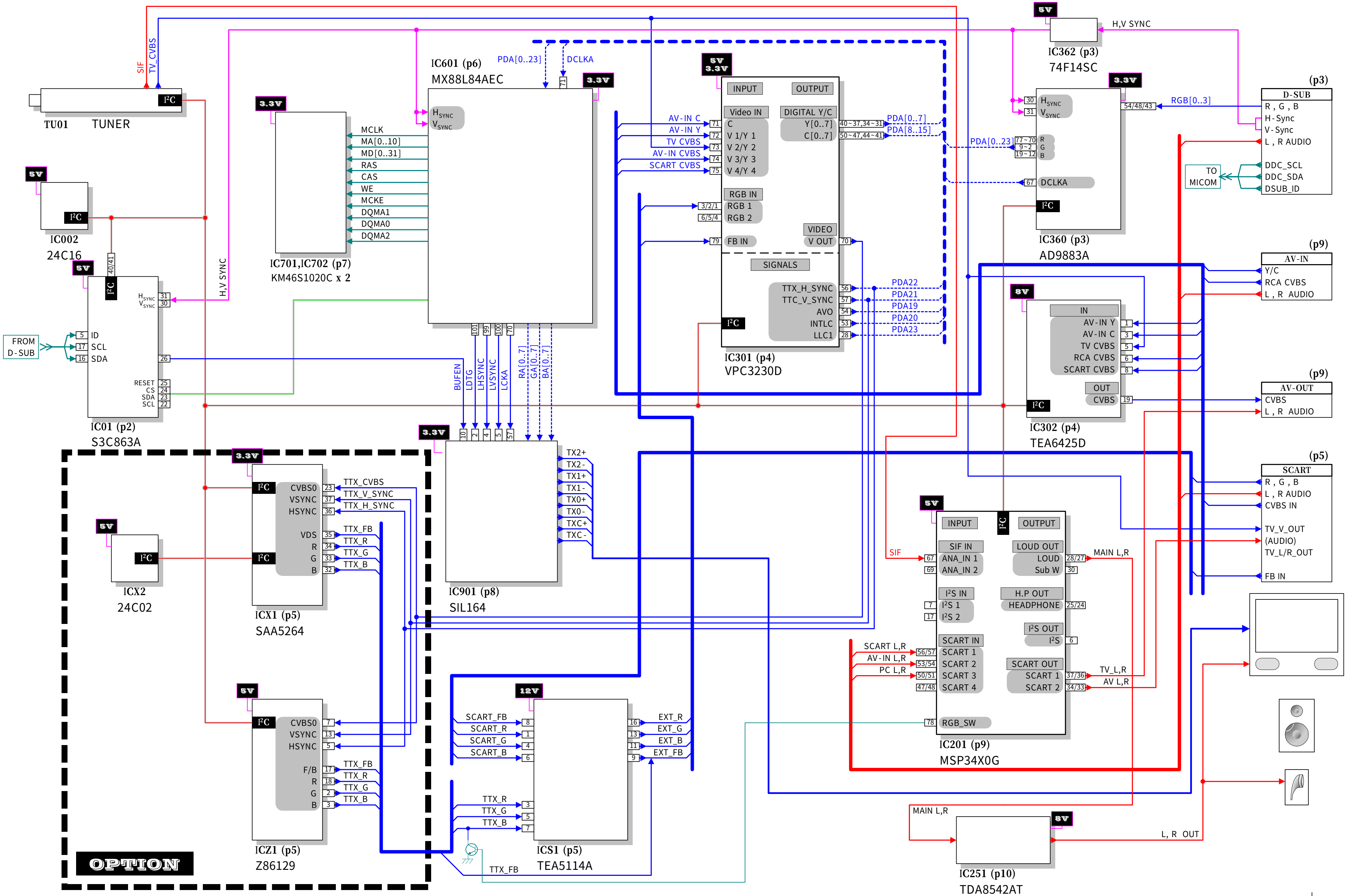
3. Inspection procedure:
   1) Afrer inserting 15pin JACK and DC-JACK, POWER ON
   2) 2) Select PC MODE.
   3) After converting MODEL NO of MSPG-925L to 21 (1024 x 768 @85Hz) , check the screen status
   4) After converting MODEL NO of MSPG-925L to 15 (800 x 600 @ 85Hz) , check the screen status
   5) After converting MODEL NO of MSPG-925L to 10 (720 x 400 @ 70.1Hz), check the screen status.
   6) After converting MODEL NO of MSPG-925L to (640 x 480 @ 85Hz) , check the screen status
   7) After converting MODEL NO of MSPG-925L to 1 (640 x 350 @ 70.1Hz) , check the screen status
   8) With AUTO POSITION , set up the screen position
   9) After converting MODEL NO of MSPG-925L to 28 (1024 x 768 @ 85Hz) ,
   In OSD MENU / FUNCTION / TRACKING , with AUTO TRACKING , set up the screen position
   10) Disconnect DC-JACK , 15pin JACK

4. BLOCK DIAGRAM

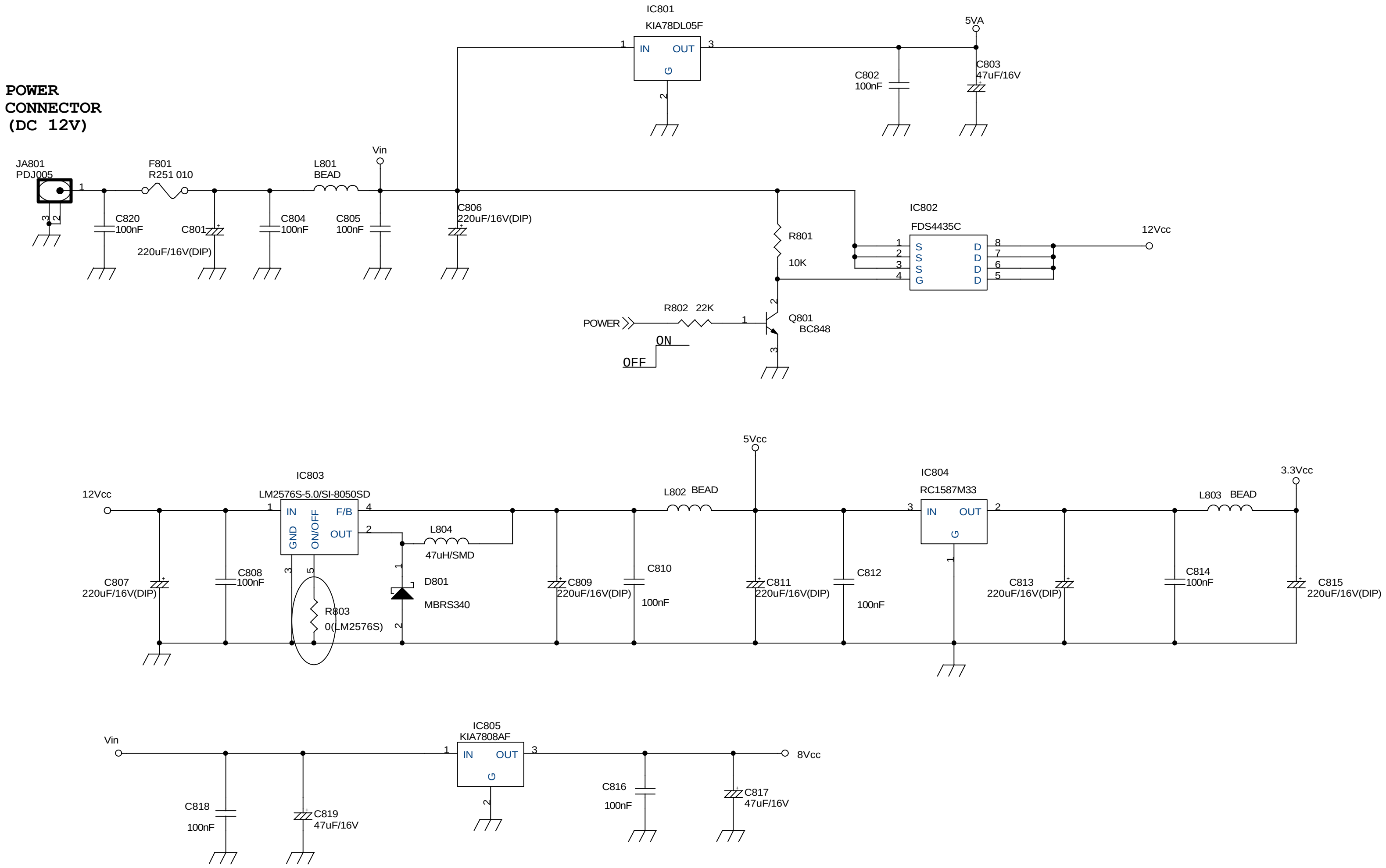



78L05
REGULATOR
STD 5V
12 Vcc
5 Vcc
3.3 Vcc
DC JACK
FDS4435
FET SW
LM2596
REGULATOR
RC1587M33
REGULATOR
KA7808R
REGULATOR
8 Vcc
SIF
AV1_AUDIO_IN
PC_AUDIO_IN
SCART_IN
AUDIO_OUT
MSP34X0G
AUDIO
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18.432MHz
IIC-BUS
TDA8542ATSSO
UND AMP
EXT_MUTE
L SP
R SP
HEAD
PHONE

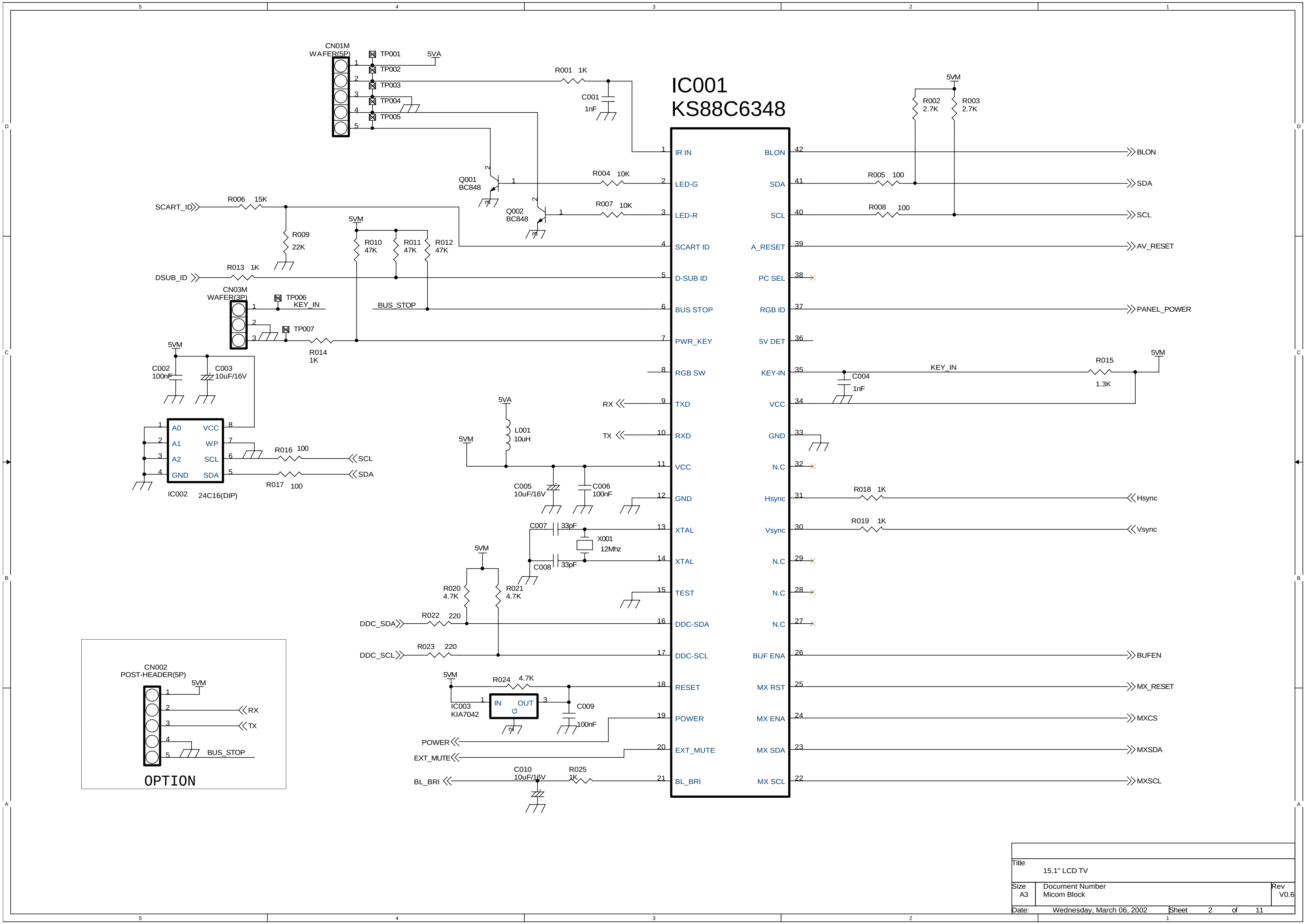
BLOCK DIAGRAM (LCD 15.1" TV)

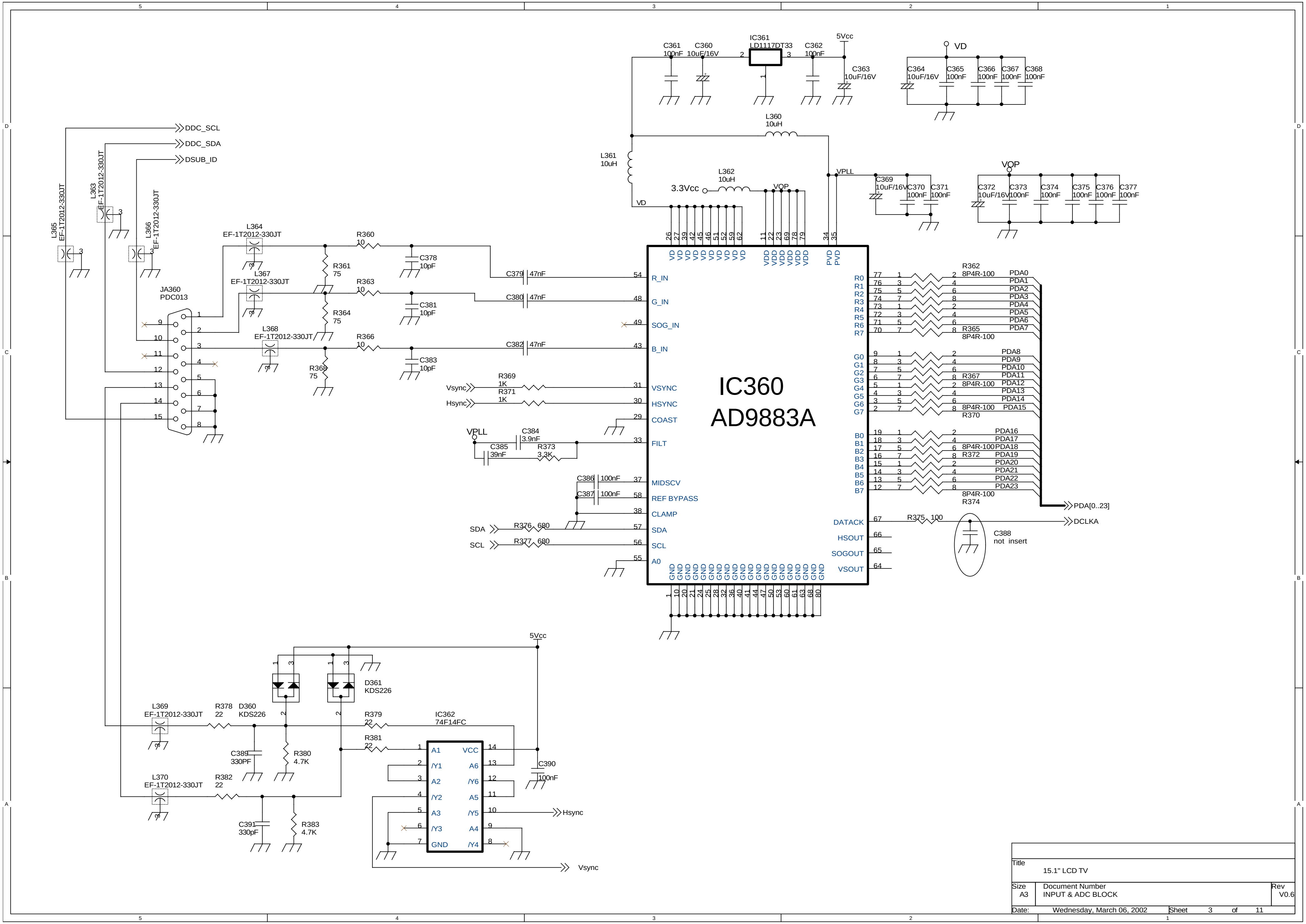


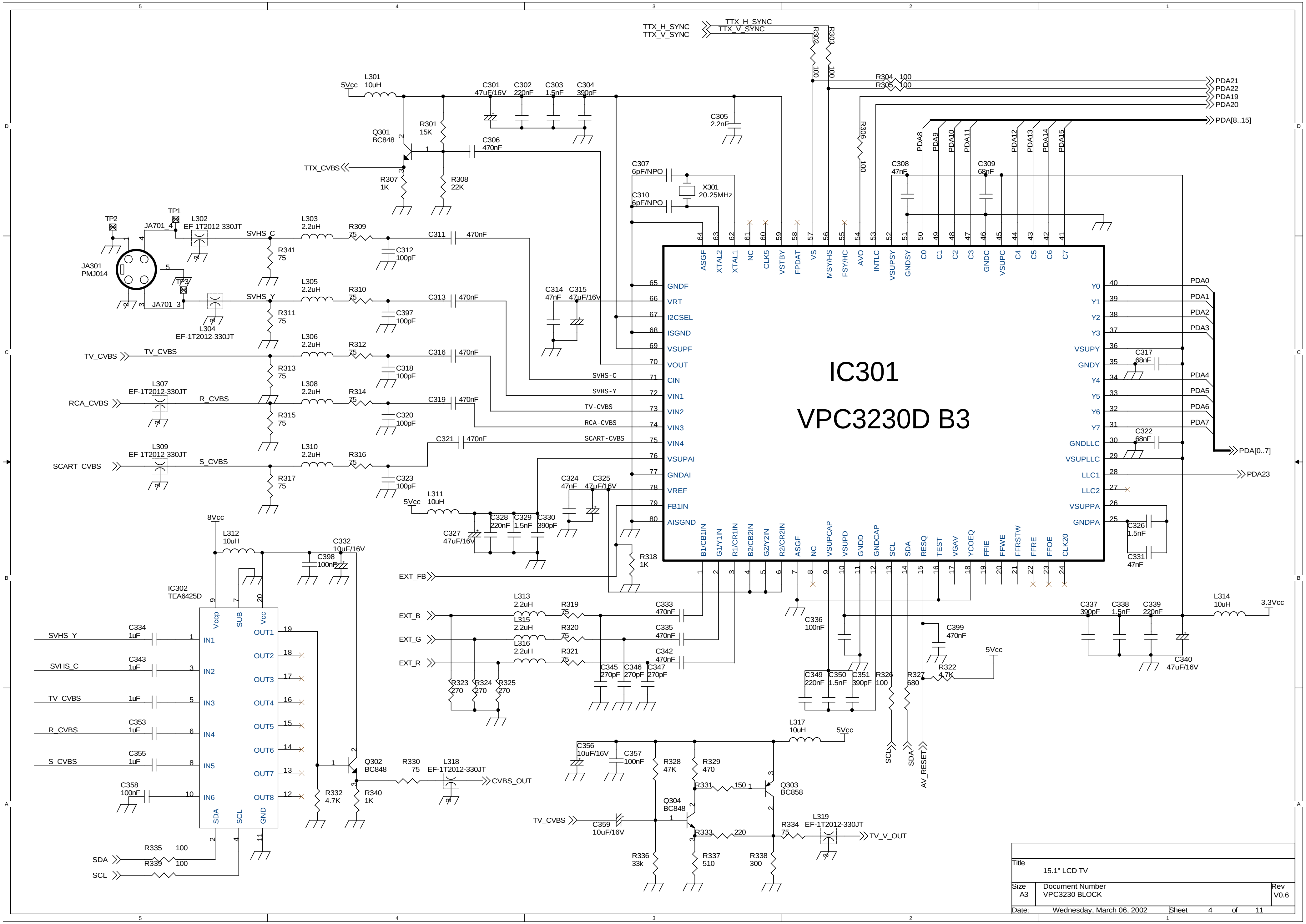
5. Circuit Diagram (15.1'' LCD TV)

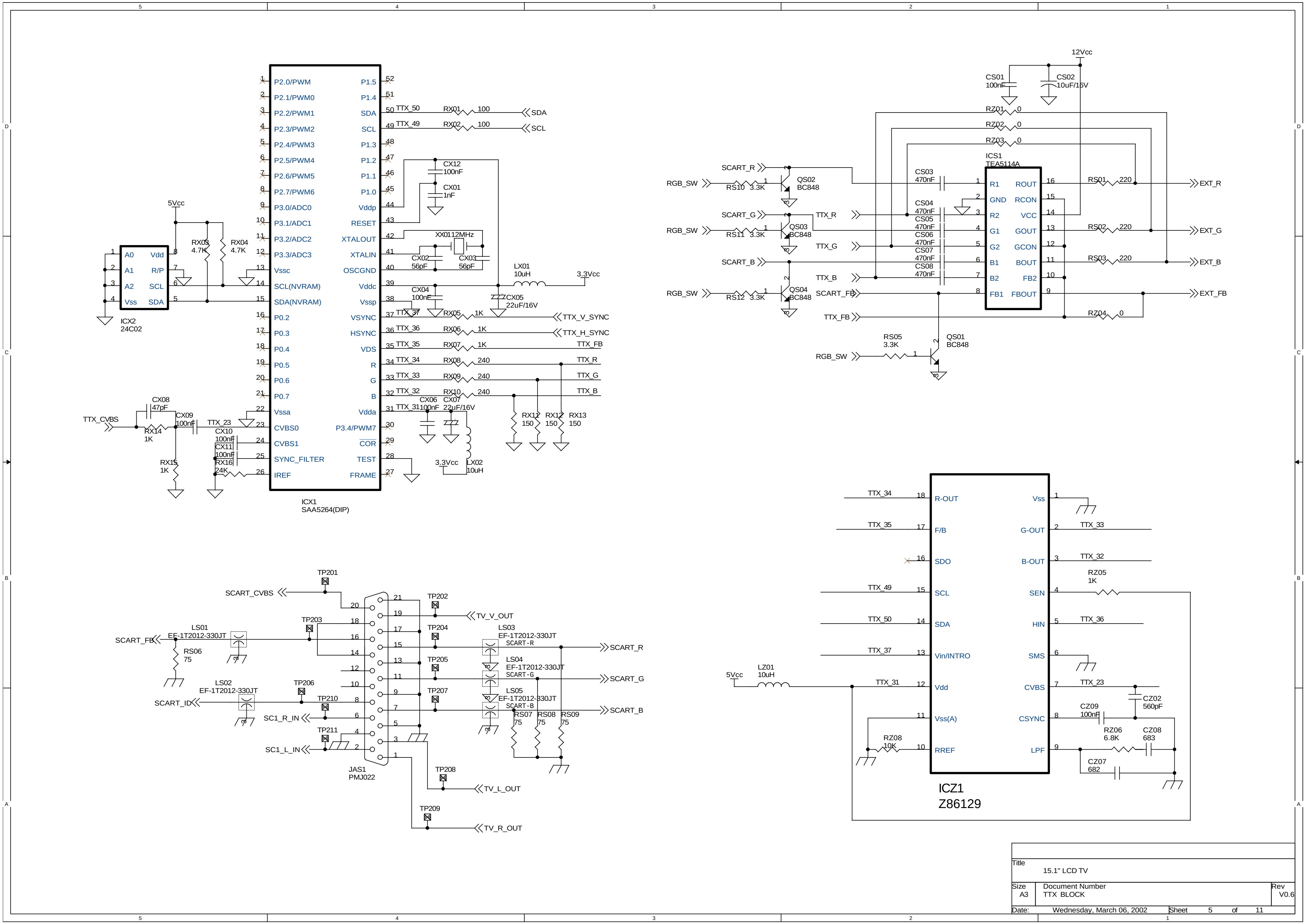


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Size A3	Document Number: Power Block	Rev V0.6
Date: Wednesday, March 06, 2002	Sheet 1 of 11	

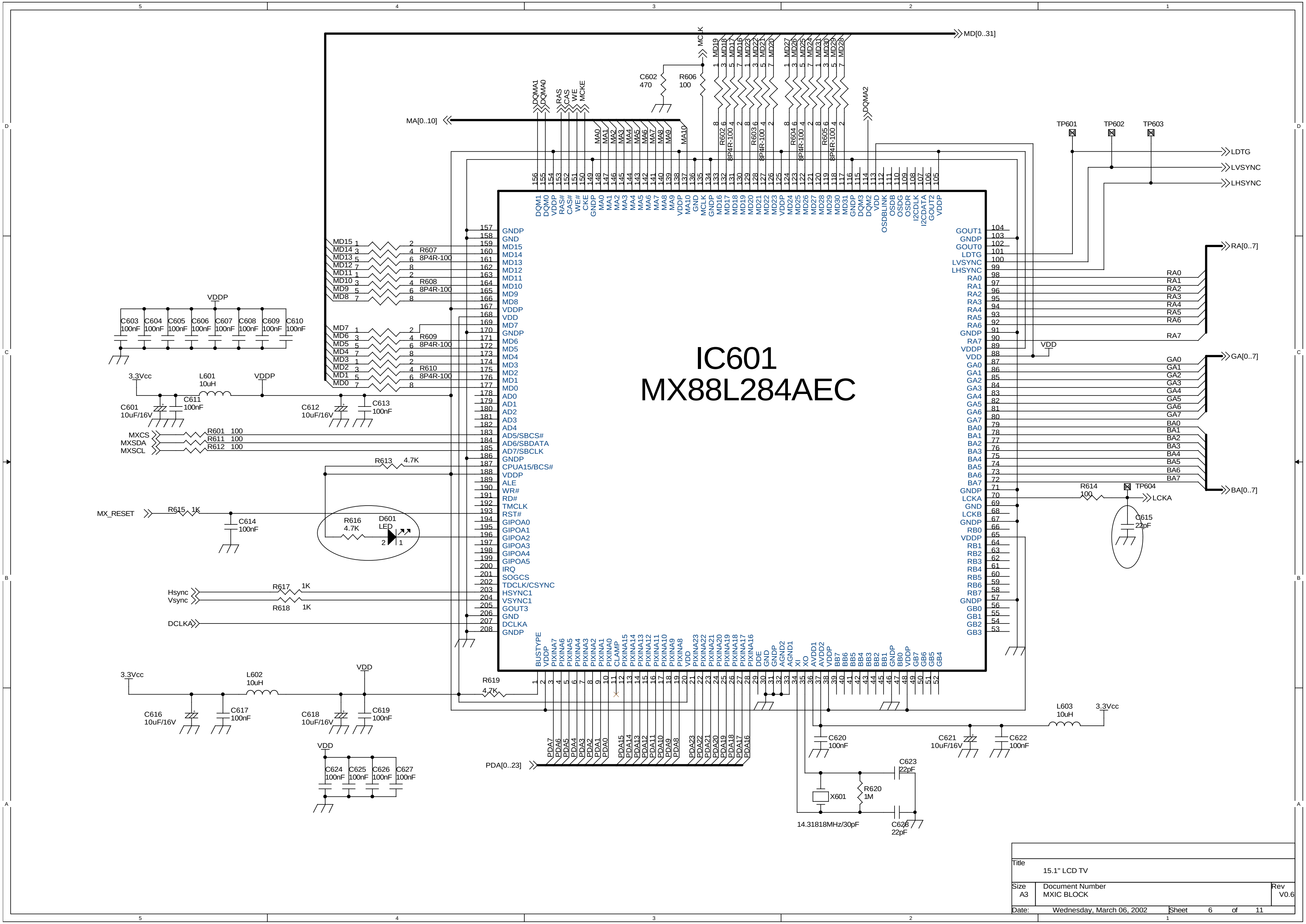

IC001
KS88C6348
IR IN
LED-G
LED-R
SCART ID
D-SUB ID
BUS STOP
PWR_KEY
RGB SW
TXD
RXD
VCC
GND
XTAL
XTAL
TEST
DDC-SDA
DDC-SCL
RESET
POWER
EXT_MUTE
BL_BRI
BLON
SDA
SCL
A_RESET
PC SEL
RGB ID
5V DET
KEY-IN
VCC
GND
N.C
Hsync
Vsync
N.C
N.C
N.C
BUF ENA
MX RST
MX ENA
MX SDA
MX SCL
CN01M
WAFER(5P)
TP001
TP002
TP003
TP004
TP005
5VA
R001 1K
C001
1nF
Q001
BC848
Q002
BC848
R004 10K
R007 10K
SCART_ID
R006 15K
R009
22K
5VM
R010
47K
R011
47K
R012
47K
DSUB_ID
R013 1K
CN03M
WAFER(3P)
TP006
KEY_IN
BUS_STOP
TP007
R014
1K
C002
100nF
C003
10uF/16V
A0
A1
A2
GND
VCC
WP
SCL
SDA
R016 100
R017 100
IC002
24C16(DIP)
SCL
SDA
L001
10uH
RX
TX
C005
10uF/16V
C006
100nF
C007
33pF
X001
12Mhz
C008
33pF
R020
4.7K
R021
4.7K
DDC_SDA
R022 220
DDC_SCL
R023 220
R024 4.7K
IC003
KIA7042
IN
OUT
G
C009
100nF
POWER
EXT_MUTE
BL_BRI
C010
10uF/16V
R025
1K
R002
2.7K
R003
2.7K
R005 100
R008 100
BLON
SDA
SCL
AV_RESET
PANEL_POWER
R015
1.3K
KEY_IN
C004
1nF
R018 1K
R019 1K
Hsync
Vsync
BUFEN
MX_RESET
MXCS
MXSDA
MXSCL
CN002
POST-HEADER(5P)
RX
TX
BUS_STOP
OPTION
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15.1" LCD TV
Size
A3
Document Number
Micom Block
Rev
V0.6
Date: Wednesday, March 06, 2002
Sheet 2 of 11

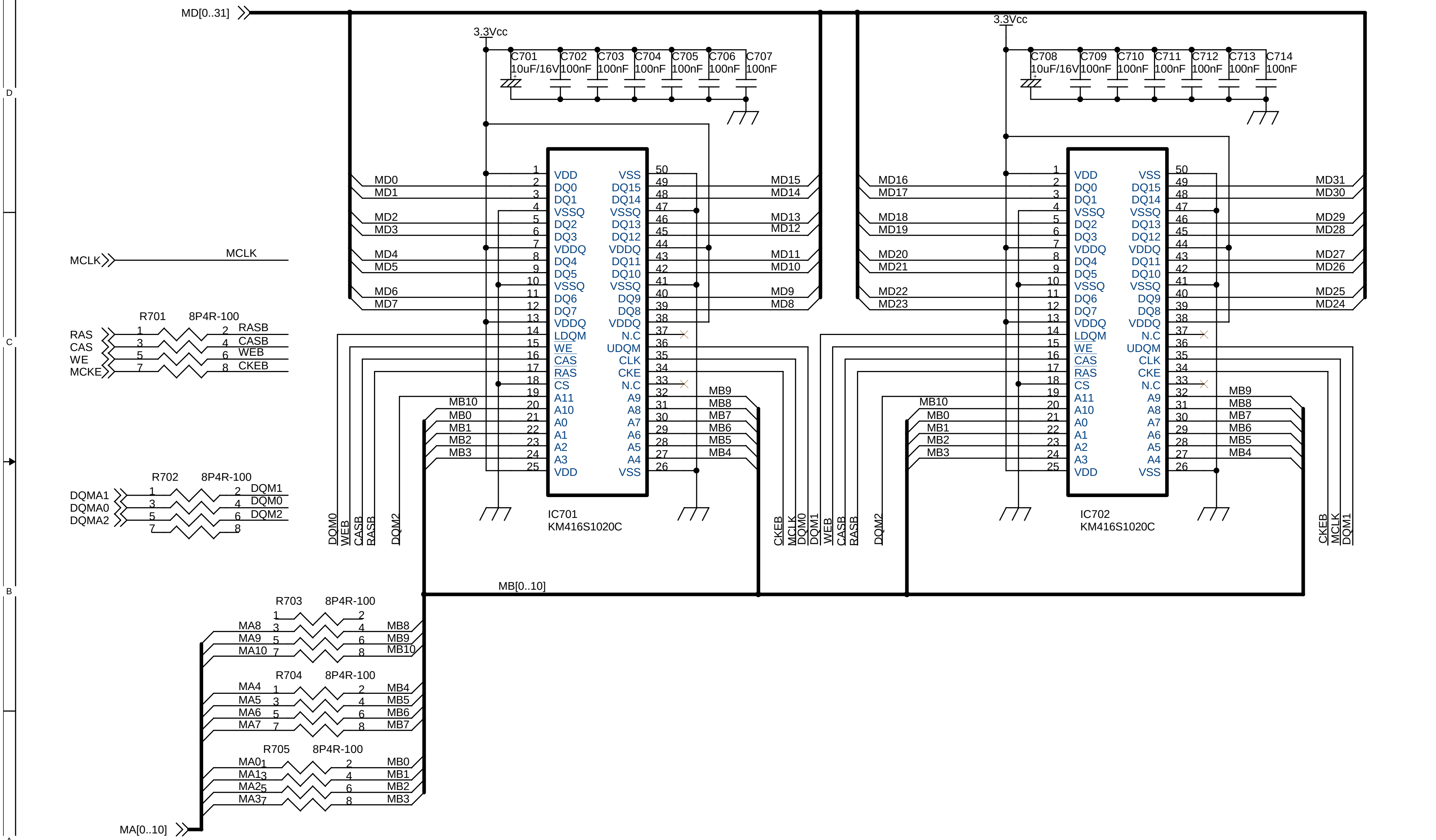

IC360
AD9883A
IC361 LD1117DT33
5Vcc
3.3Vcc
VD
VOP
VPLL
C361 100nF
C360 10uF/16V
C362 100nF
C363 10uF/16V
C364 10uF/16V
C365 100nF
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L362 10uH
C369 10uF/16V
C370 100nF
C371 100nF
C372 10uF/16V
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DDC_SDA
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R360 10
R361 75
R363 10
R364 75
R366 10
R368 75
C378 10pF
C381 10pF
C383 10pF
C379 47nF
C380 47nF
C382 47nF
R_IN
G_IN
SOG_IN
B_IN
Vsync
Hsync
R369 1K
R371 1K
VSYNC
HSYNC
COAST
C384 3.9nF
C385 39nF
R373 3.3K
FILT
C386 100nF
C387 100nF
MIDSCV
REF BYPASS
CLAMP
SDA
SCL
R376 680
R377 680
A0
R0 R1 R2 R3 R4 R5 R6 R7
G0 G1 G2 G3 G4 G5 G6 G7
B0 B1 B2 B3 B4 B5 B6 B7
R362 8P4R-100
R365 8P4R-100
R367 8P4R-100
R370 8P4R-100
R372 8P4R-100
R374 8P4R-100
PDA0 PDA1 PDA2 PDA3 PDA4 PDA5 PDA6 PDA7
PDA8 PDA9 PDA10 PDA11 PDA12 PDA13 PDA14 PDA15
PDA16 PDA17 PDA18 PDA19 PDA20 PDA21 PDA22 PDA23
PDA[0..23]
DATACK
HSOUT
SOGOUT
VSOUT
R375 100
DCLKA
C388 not insert
GND
VDD
PVD
D360 KDS226
D361 KDS226
L369 EF-1T2012-330JT
L370 EF-1T2012-330JT
R378 22
R379 22
R380 4.7K
R381 22
R382 22
R383 4.7K
C389 330PF
C391 330pF
C390 100nF
IC362 74F14FC
A1 /Y1 A2 /Y2 A3 /Y3 GND
VCC A6 /Y6 A5 /Y5 A4 /Y4
Title
15.1" LCD TV
Size A3
Document Number INPUT & ADC BLOCK
Rev V0.6
Date: Wednesday, March 06, 2002
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IC301
VPC3230D B3
IC302
TEA6425D
TTX_H_SYNC
TTX_V_SYNC
TTX_CVBS
5Vcc
8Vcc
3.3Vcc
SVHS_C
SVHS_Y
TV_CVBS
RCA_CVBS
R_CVBS
SCART_CVBS
S_CVBS
EXT_FB
EXT_B
EXT_G
EXT_R
CVBS_OUT
TV_V_OUT
SDA
SCL
AV_RESET
PDA21
PDA22
PDA19
PDA20
PDA[8..15]
PDA[0..7]
PDA23
JA301
PMJ014
X301
20.25MHz
Q301
BC848
Q302
BC848
Q303
BC858
Q304
BC848
Title
15.1" LCD TV
Size
A3
Document Number
VPC3230 BLOCK
Rev
V0.6
Date: Wednesday, March 06, 2002
Sheet 4 of 11



Title	15.1" LCD TV	
Size A3	Document Number TTX BLOCK	Rev V0.6
Date:	Wednesday, March 06, 2002	Sheet 5 of 11

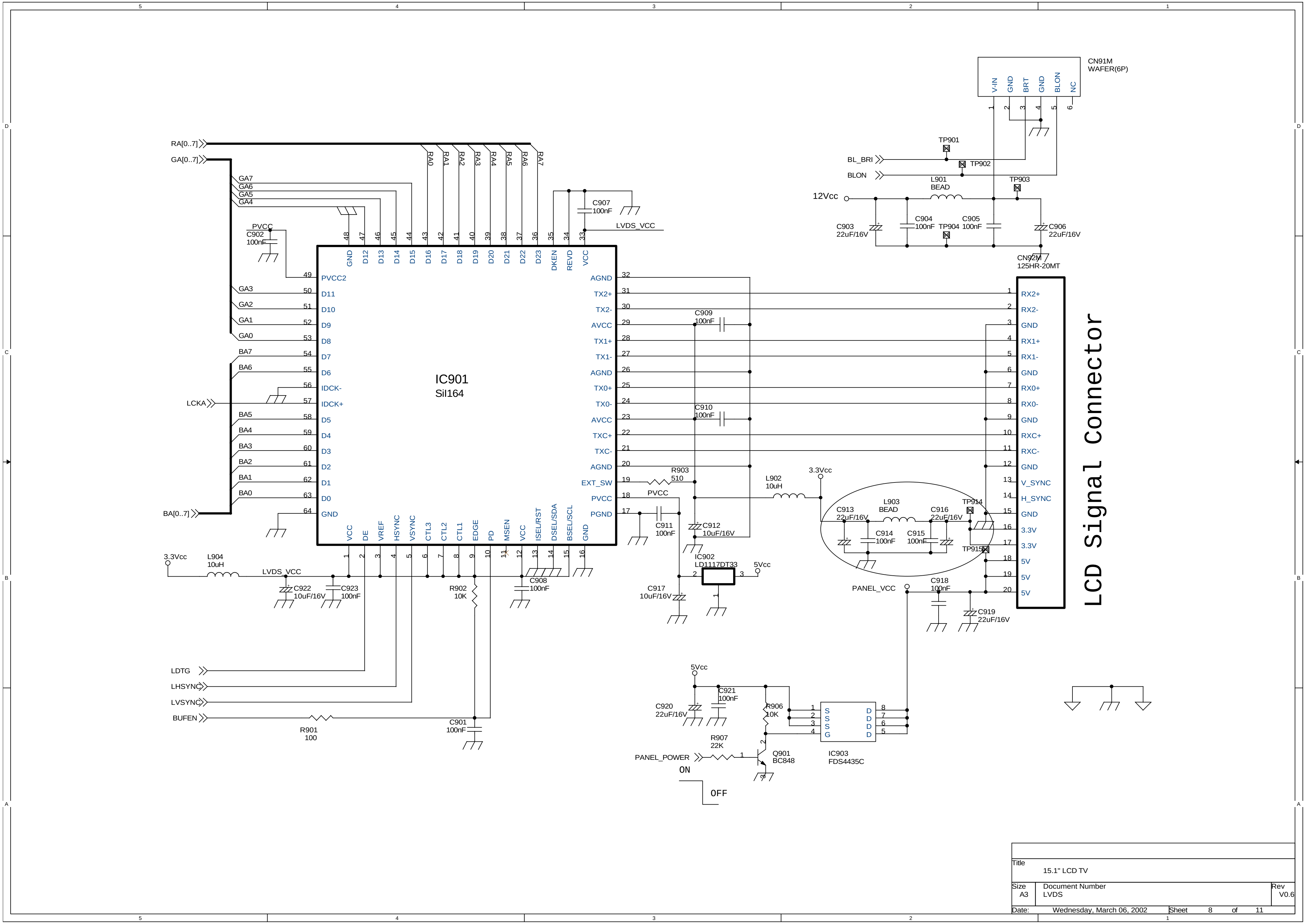

IC601
MX88L284AEC
MD[0..31]
MA[0..10]
MCLK
DQMA1
DQMA0
RAS
CAS
WE
MCKE
DQMA2
C602 470
R606 100
R602 8P4R-100
R603 8P4R-100
R604 8P4R-100
R605 8P4R-100
R607 8P4R-100
R608 8P4R-100
R609 8P4R-100
R610 8P4R-100
TP601
TP602
TP603
TP604
LDTG
LVSYNC
LHSYNC
RA[0..7]
GA[0..7]
BA[0..7]
LCKA
R614 100
C615 22pF
VDDP
C603 100nF
C604 100nF
C605 100nF
C606 100nF
C607 100nF
C608 100nF
C609 100nF
C610 100nF
3.3Vcc
L601 10uH
C601 10uF/16V
C611 100nF
C612 10uF/16V
C613 100nF
MXCS
MXSDA
MXSCL
R601 100
R611 100
R612 100
R613 4.7K
MX_RESET
R615 1K
C614 100nF
R616 4.7K
D601 LED
Hsync
Vsync
R617 1K
R618 1K
DCLKA
L602 10uH
VDD
C616 10uF/16V
C617 100nF
C618 10uF/16V
C619 100nF
R619 4.7K
C624 100nF
C625 100nF
C626 100nF
C627 100nF
PDA[0..23]
C620 100nF
C621 10uF/16V
C622 100nF
L603 10uH
C623 22pF
R620 1M
X601
14.31818MHz/30pF
C628 22pF
Title
15.1" LCD TV
Size A3
Document Number
MXIC BLOCK
Rev V0.6
Date: Wednesday, March 06, 2002
Sheet 6 of 11



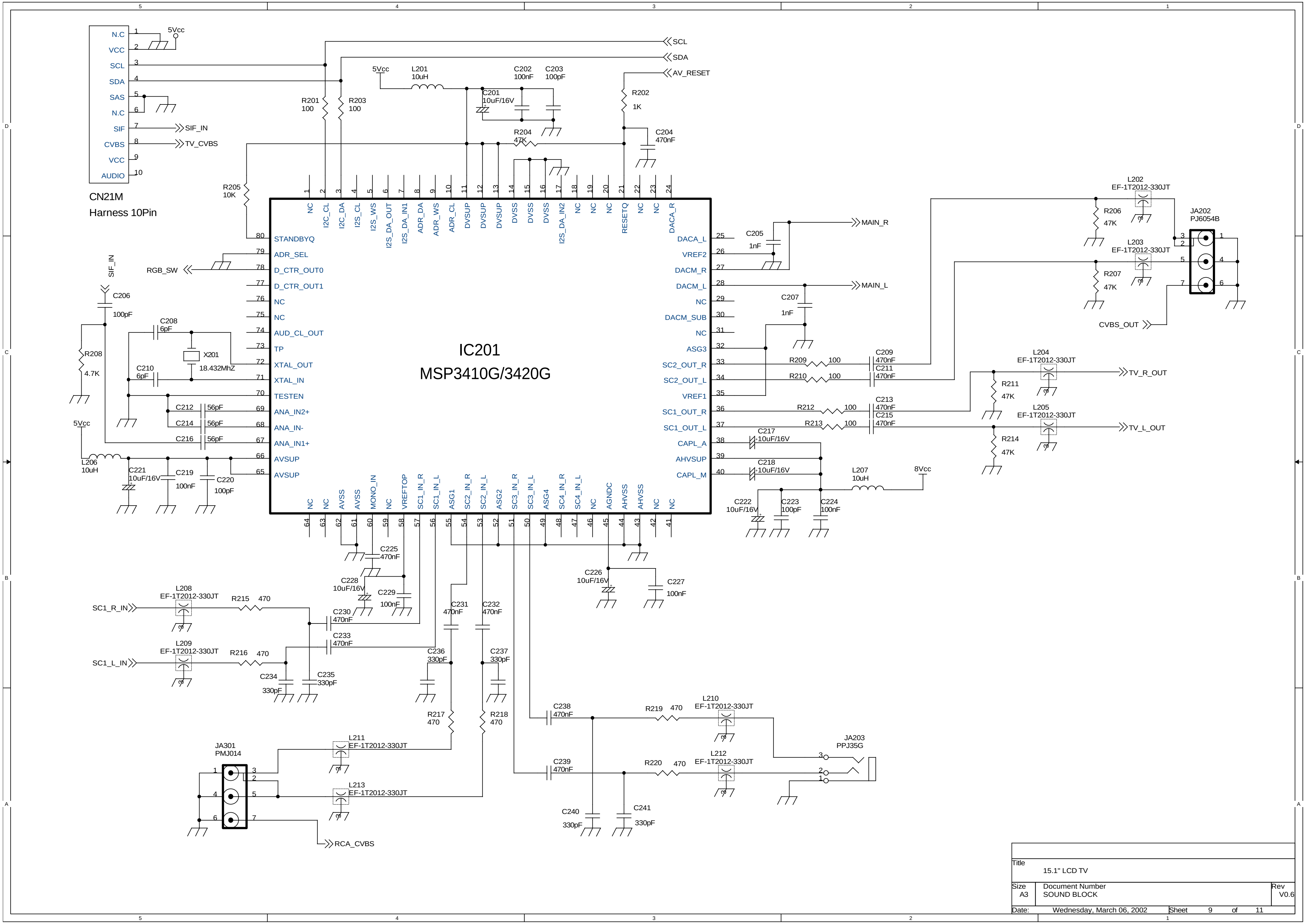
Title
15.1" LCD TV

Size	Document Number	Rev
A4	FRAME BUFFER BLOCK	V0.6

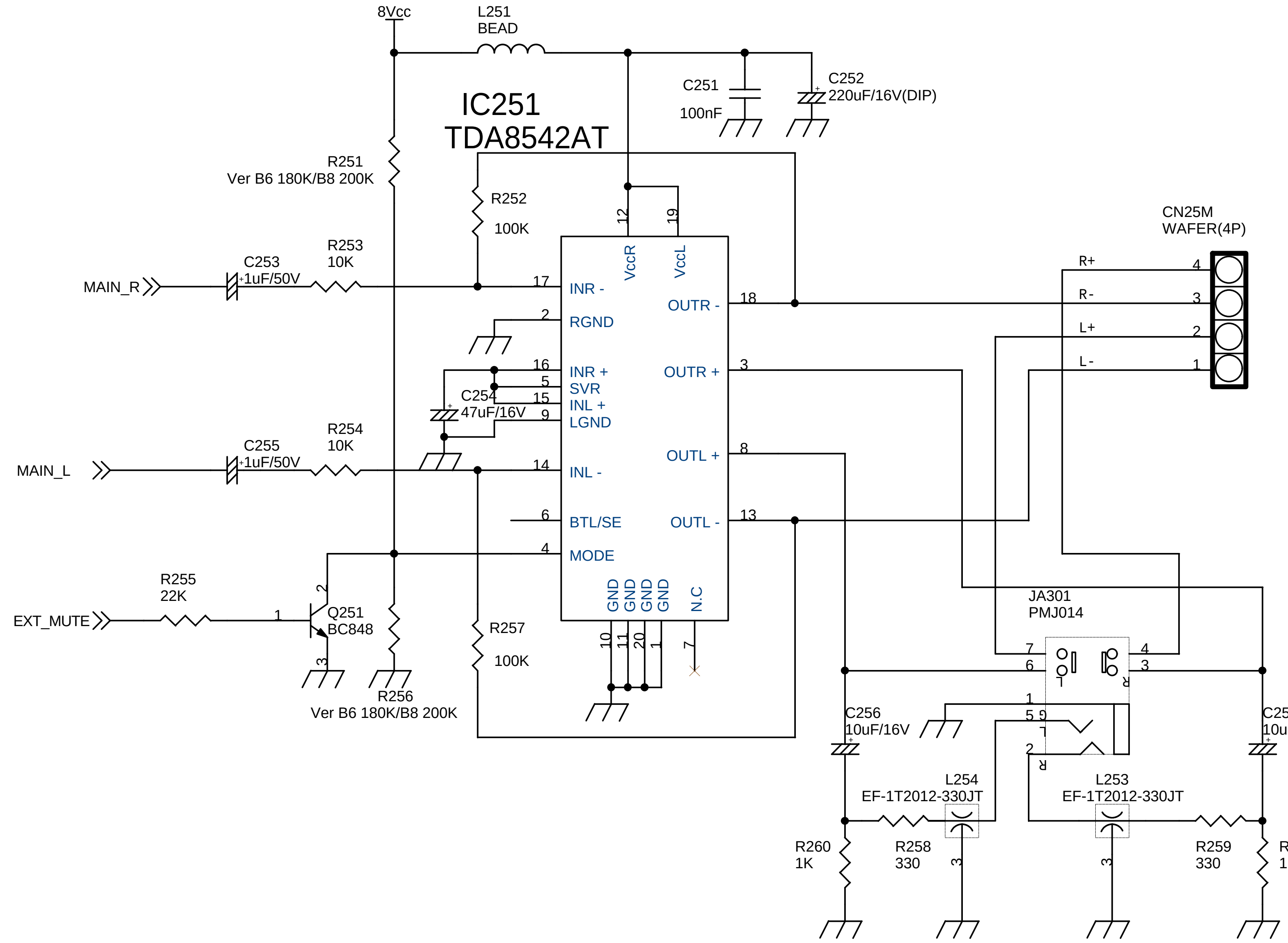
Date: Wednesday, March 06, 2002 Sheet 7 of 11



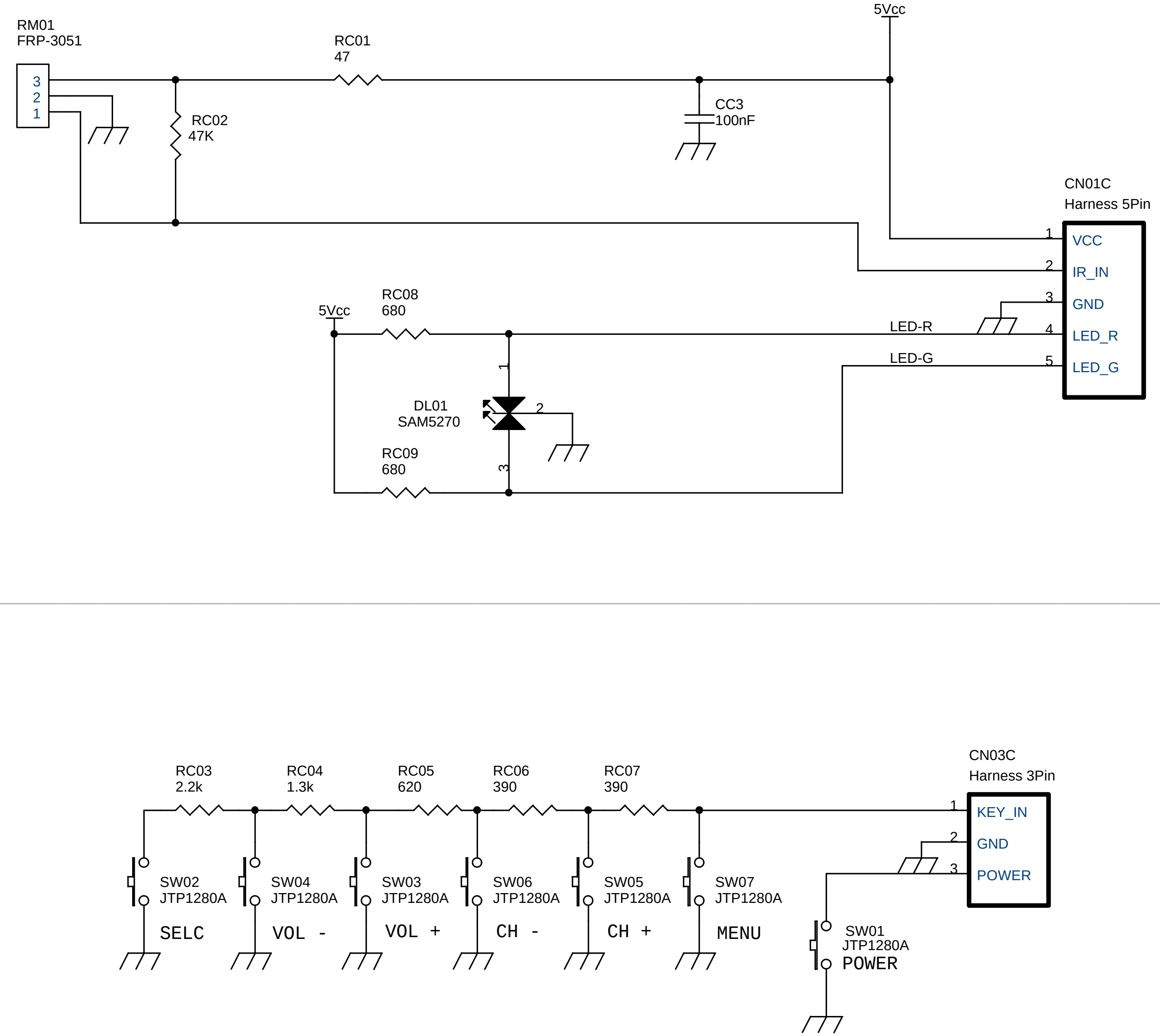
IC901
Sil164
LCD Signal Connector
CN91M
WAFER(6P)
V-IN GND BRT GND BLON NC
CN92M
125HR-20MT
RX2+ RX2- GND RX1+ RX1- GND RX0+ RX0- GND RXC+ RXC- GND V_SYNC H_SYNC GND 3.3V 3.3V 5V 5V 5V
RA[0..7]
GA[0..7]
BA[0..7]
LCKA
LDTG
LHSYNC
LVSYNC
BUFEN
BL_BRI
BLON
12Vcc
3.3Vcc
5Vcc
PVCC
LVDS_VCC
PANEL_VCC
PANEL_POWER
ON
OFF
PVCC2 D11 D10 D9 D8 D7 D6 IDCK- IDCK+ D5 D4 D3 D2 D1 D0 GND
GND D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 DKEN REVD VCC
AGND TX2+ TX2- AVCC TX1+ TX1- AGND TX0+ TX0- AVCC TXC+ TXC- AGND EXT_SW PVCC PGND
VCC DE VREF HSYNC VSYNC CTL3 CTL2 CTL1 EDGE PD MSEN VCC ISEL/RST DSEL/SDA BSEL/SCL GND
L901 BEAD
L902 10uH
L903 BEAD
L904 10uH
C902 100nF
C903 22uF/16V
C904 100nF
C905 100nF
C906 22uF/16V
C907 100nF
C908 100nF
C909 100nF
C910 100nF
C911 100nF
C912 10uF/16V
C913 22uF/16V
C914 100nF
C915 100nF
C916 22uF/16V
C917 10uF/16V
C918 100nF
C919 22uF/16V
C920 22uF/16V
C921 100nF
C922 10uF/16V
C923 100nF
C901 100nF
R901 100
R902 10K
R903 510
R906 10K
R907 22K
Q901 BC848
IC902 LD1117DT33
IC903 FDS4435C
TP901 TP902 TP903 TP904 TP914 TP915
Title
15.1" LCD TV
Size A3
Document Number LVDS
Rev V0.6
Date: Wednesday, March 06, 2002
Sheet 8 of 11



Title	15.1" LCD TV	
Size A3	Document Number SOUND BLOCK	Rev V0.6
Date: Wednesday, March 06, 2002	Sheet 9 of 11	



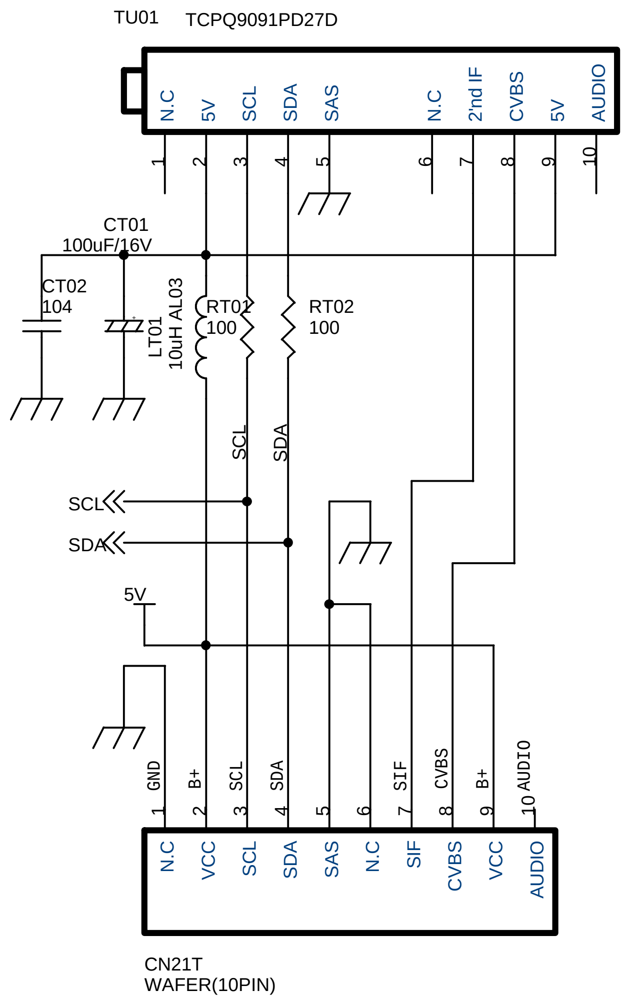
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Size A	Document Number SOUND AMP	Rev V0.6
Date: Wednesday, March 06, 2002	Sheet 10 of 11	



Title 15.1" LCD TV

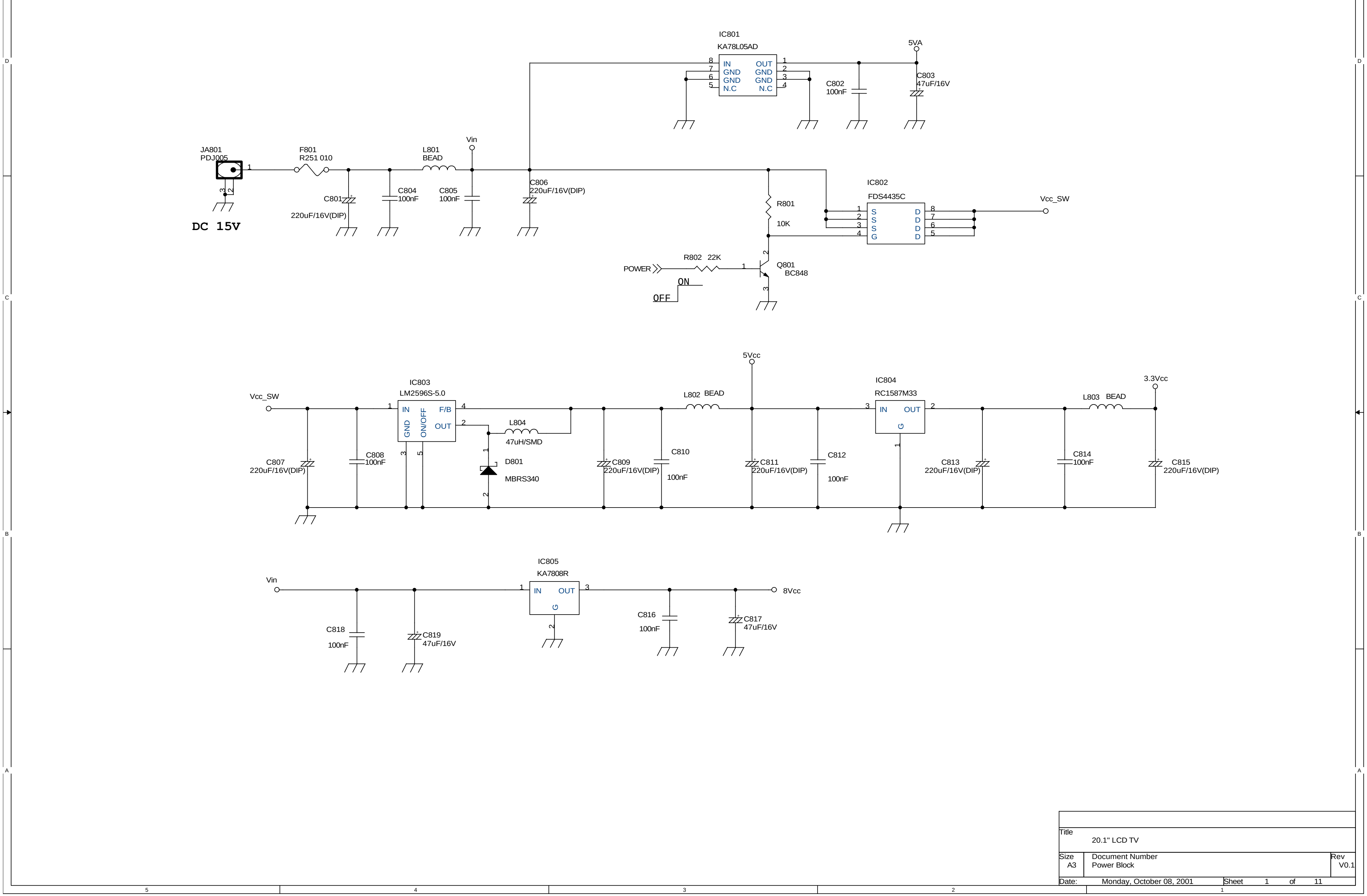
Size A4 | Document Number CONTROL | Rev V0.6

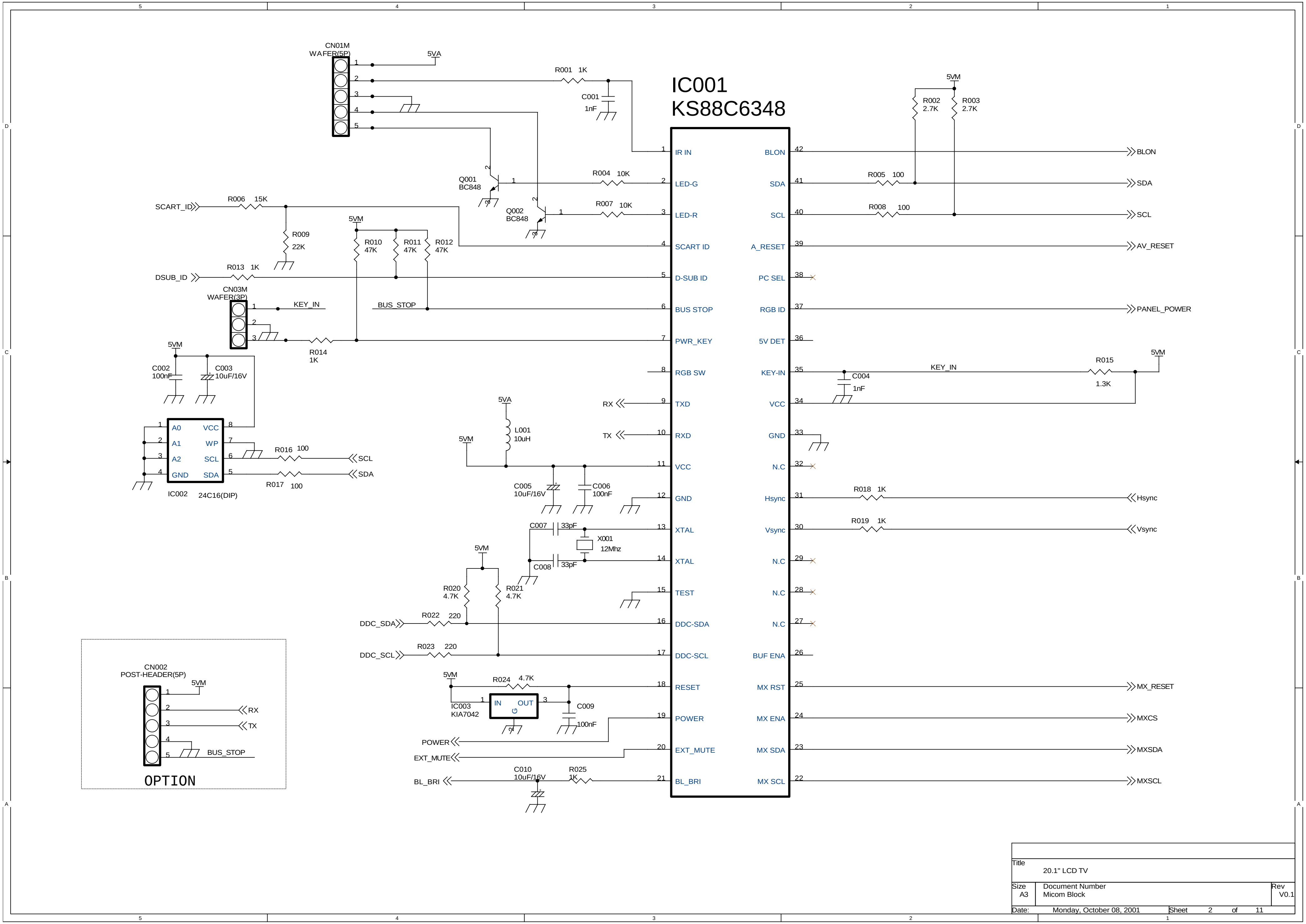
Date: Tuesday, November 13, 2001 | Sheet 11 of 11

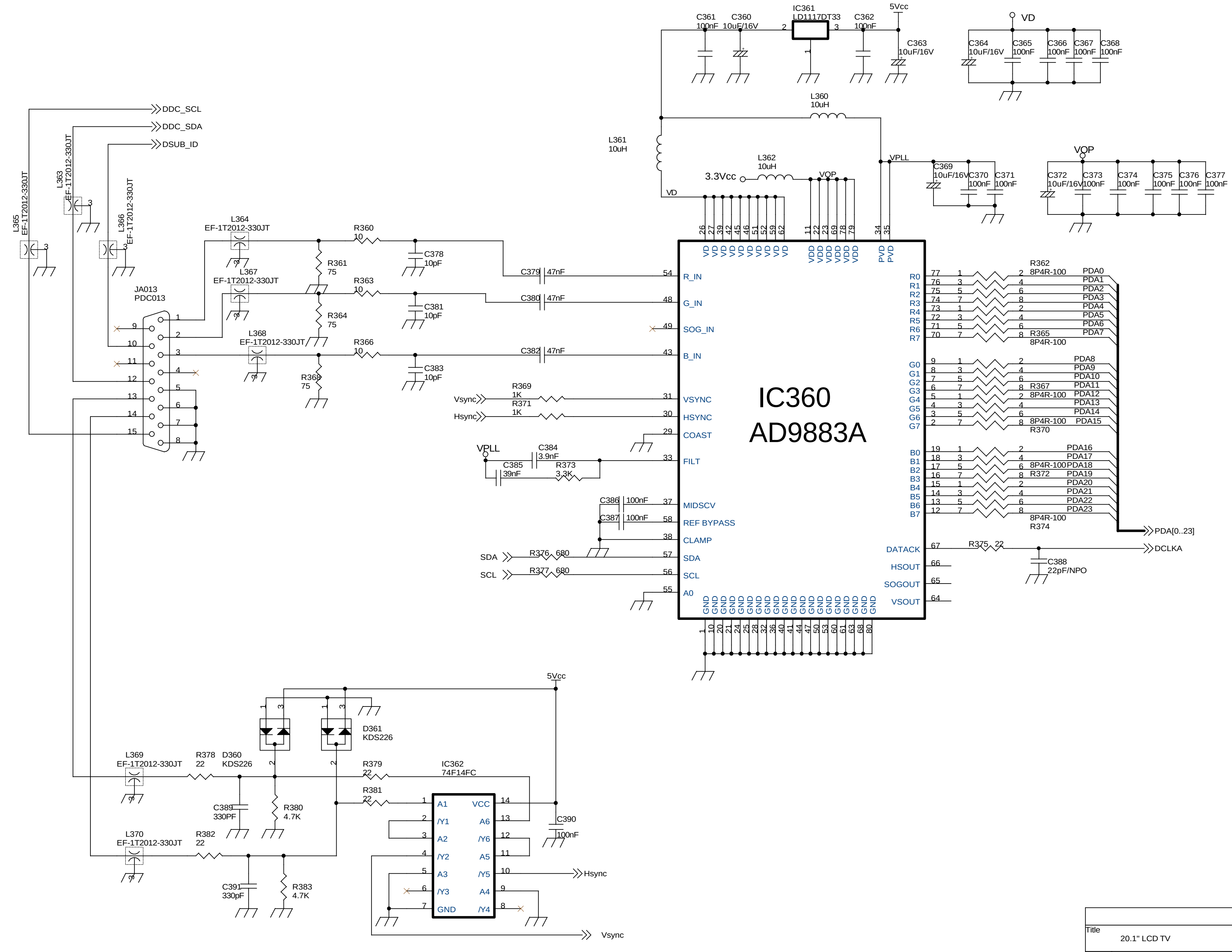


Title	15.1" LCD TV	
Size A	Document Number TUNER	Rev V0.6
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5. Circuit Diagram (20.1" LCD TV)



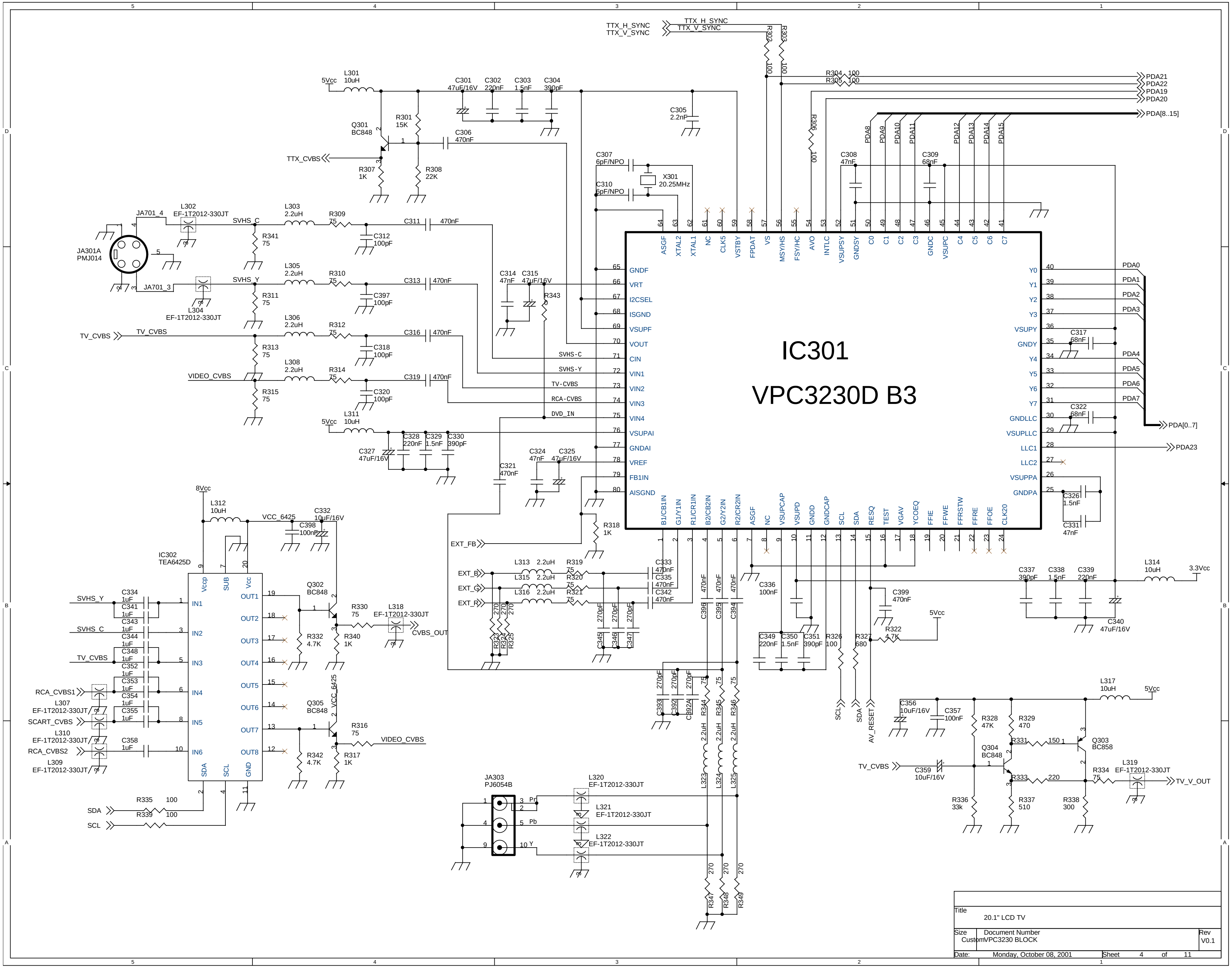

IC001
KS88C6348
IR IN
LED-G
LED-R
SCART ID
D-SUB ID
BUS STOP
PWR_KEY
RGB SW
TXD
RXD
VCC
GND
XTAL
XTAL
TEST
DDC-SDA
DDC-SCL
RESET
POWER
EXT_MUTE
BL_BRI
BLON
SDA
SCL
A_RESET
PC SEL
RGB ID
5V DET
KEY-IN
VCC
GND
N.C
Hsync
Vsync
N.C
N.C
N.C
BUF ENA
MX RST
MX ENA
MX SDA
MX SCL
CN01M
WAFER(5P)
5VA
R001 1K
C001 1nF
5VM
R002 2.7K
R003 2.7K
BLON
R005 100
SDA
R008 100
SCL
AV_RESET
PANEL_POWER
Q001 BC848
R004 10K
Q002 BC848
R007 10K
SCART_ID
R006 15K
R009 22K
R010 47K
R011 47K
R012 47K
DSUB_ID
R013 1K
CN03M
WAFER(3P)
KEY_IN
BUS_STOP
R014 1K
R015 1.3K
C004 1nF
C002 100nF
C003 10uF/16V
IC002 24C16(DIP)
A0
A1
A2
GND
VCC
WP
SCL
SDA
R016 100
R017 100
RX
TX
L001 10uH
C005 10uF/16V
C006 100nF
R018 1K
Hsync
R019 1K
Vsync
C007 33pF
C008 33pF
X001 12Mhz
R020 4.7K
R021 4.7K
DDC_SDA
R022 220
DDC_SCL
R023 220
R024 4.7K
IC003 KIA7042
IN
OUT
G
C009 100nF
MX_RESET
MXCS
MXSDA
MXSCL
POWER
EXT_MUTE
BL_BRI
C010 10uF/16V
R025 1K
CN002
POST-HEADER(5P)
OPTION
Title
20.1" LCD TV
Size A3
Document Number
Micom Block
Rev V0.1
Date: Monday, October 08, 2001
Sheet 2 of 11

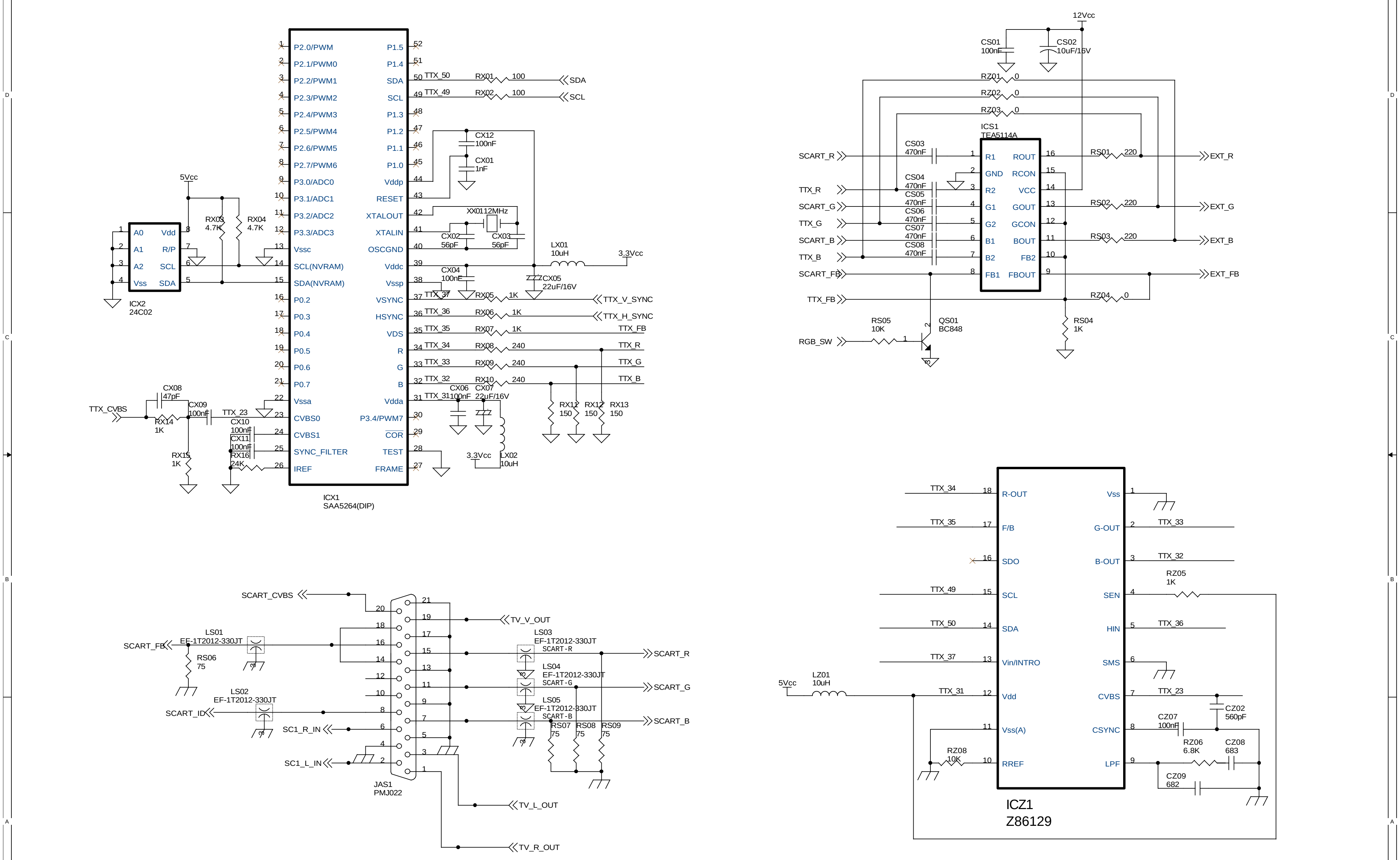


Title
20.1" LCD TV

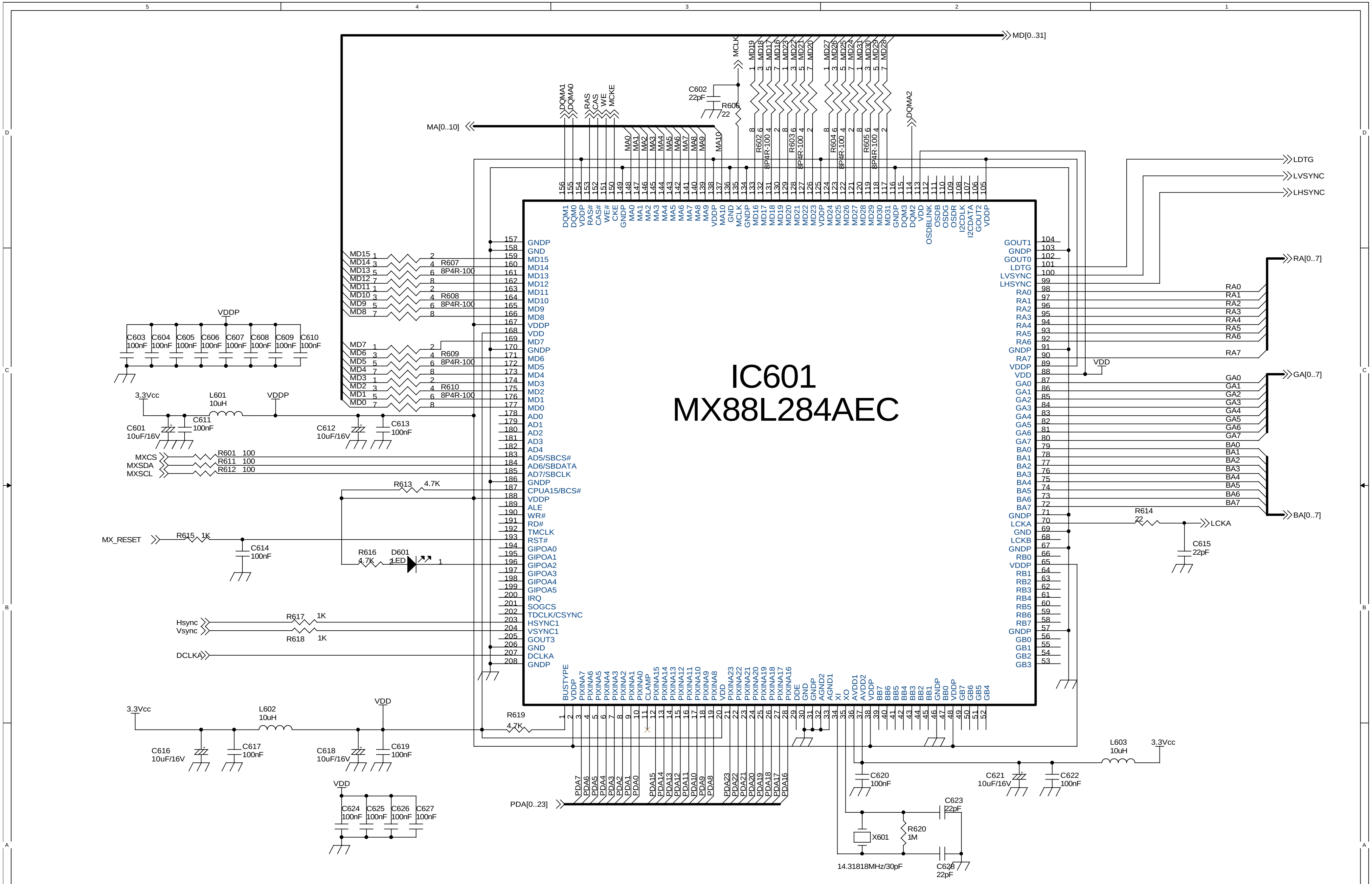
Size	Document Number	Rev
A3	INPUT & ADC BLOCK	V0.1

Date: Monday, October 08, 2001 Sheet 3 of 11

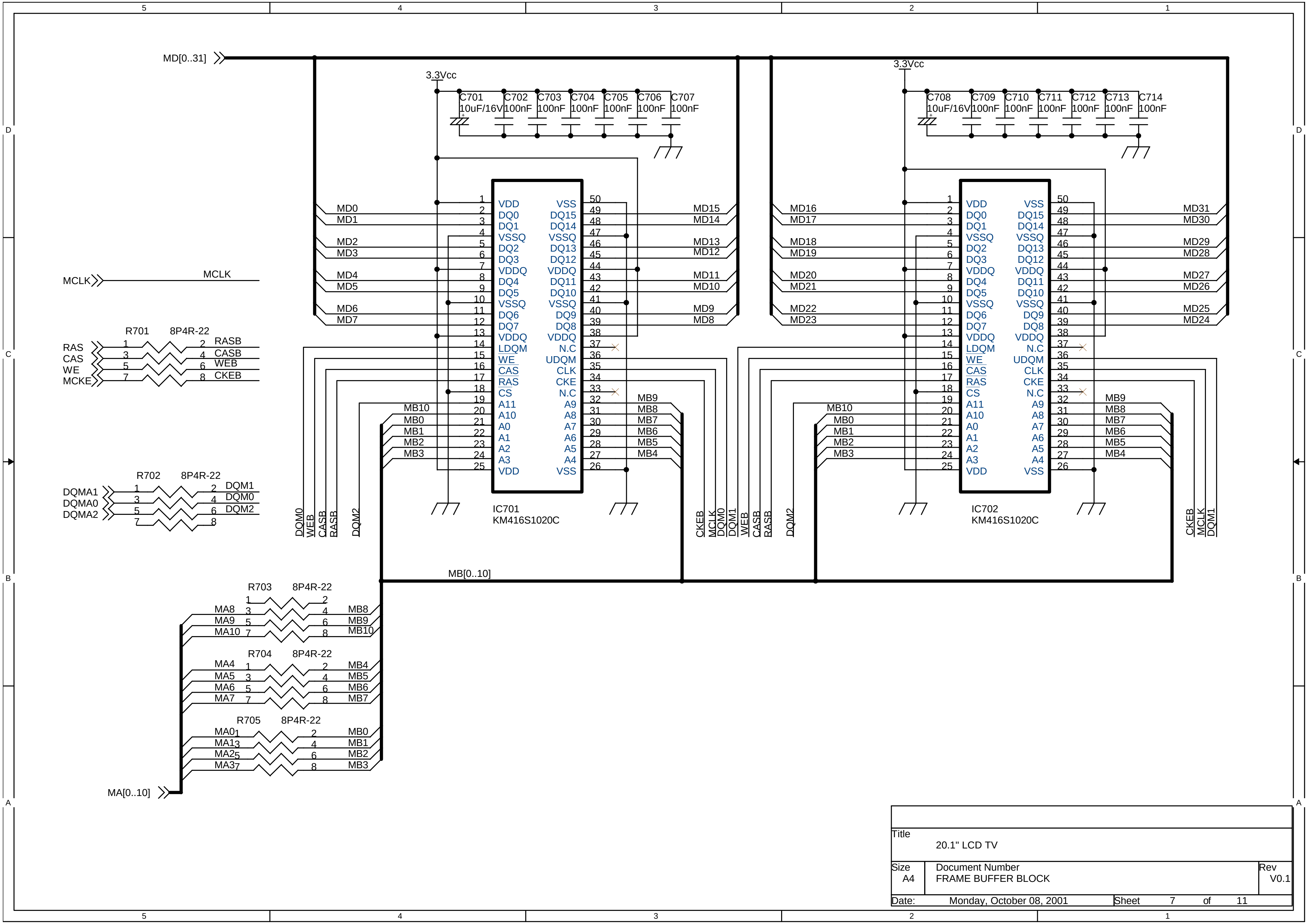

IC301
VPC3230D B3
IC302
TEA6425D
TTX_H_SYNC
TTX_V_SYNC
TTX_CVBS
Q301
BC848
X301
20.25MHz
JA301A
PMJ014
SVHS_C
SVHS_Y
TV_CVBS
VIDEO_CVBS
DVD_IN
EXT_FB
EXT_B
EXT_G
EXT_R
CVBS_OUT
RCA_CVBS1
SCART_CVBS
RCA_CVBS2
SDA
SCL
AV_RESET
TV_V_OUT
JA303
PJ6054B
Pr
Pb
Y
PDA[8..15]
PDA[0..7]
PDA21
PDA22
PDA19
PDA20
PDA23
Q302
BC848
Q305
BC848
Q303
BC858
Q304
BC848
5Vcc
8Vcc
3.3Vcc
VCC_6425
Title
20.1" LCD TV
Size
Custom
Document Number
VPC3230 BLOCK
Rev
V0.1
Date:
Monday, October 08, 2001
Sheet 4 of 11



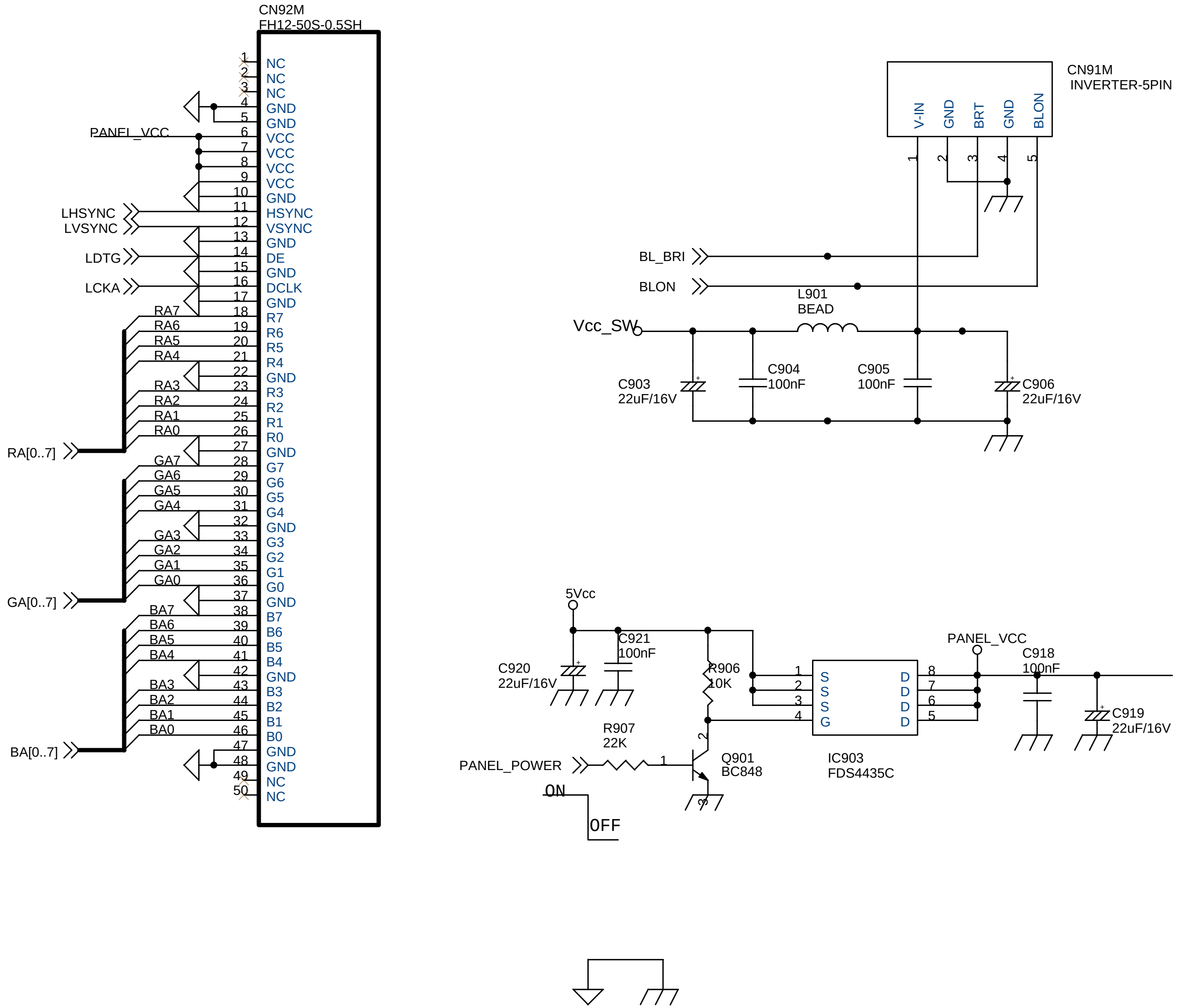
Title	15.1" LCD TV	
Size A3	Document Number TTX BLOCK	Rev V0.1
Date: Monday, October 08, 2001	Sheet 5 of 11	



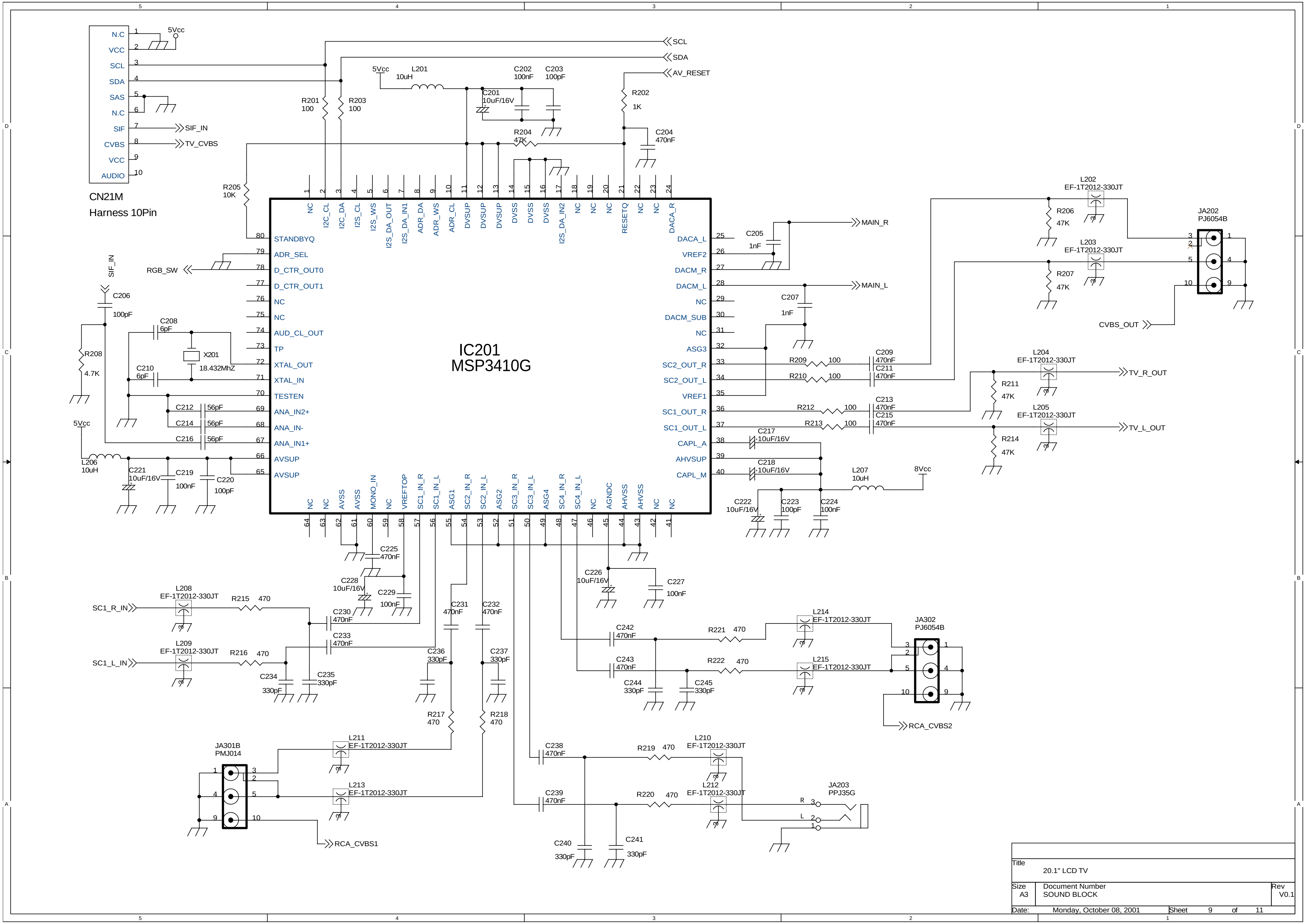
Title	20.1" LCD TV		
Size A3	Document Number MXIC BLOCK		Rev V0.1
Date:	Monday, October 08, 2001	Sheet 6 of 11	

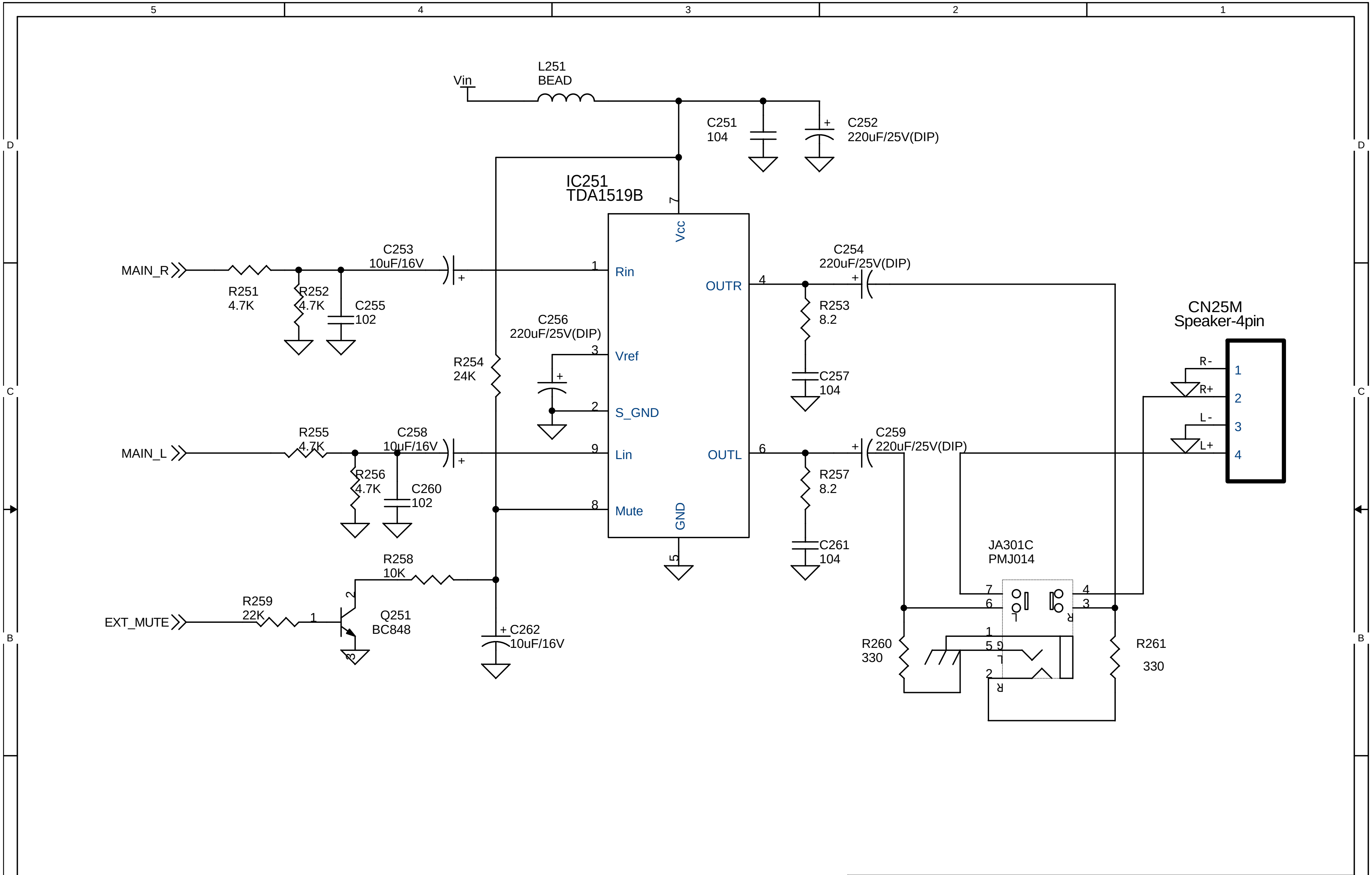


MD[0..31]
3.3Vcc
C701 10uF/16V
C702 100nF
C703 100nF
C704 100nF
C705 100nF
C706 100nF
C707 100nF
C708 10uF/16V
C709 100nF
C710 100nF
C711 100nF
C712 100nF
C713 100nF
C714 100nF
MCLK
R701 8P4R-22
RAS
CAS
WE
MCKE
RASB
CASB
WEB
CKEB
R702 8P4R-22
DQMA1
DQMA0
DQMA2
DQM1
DQM0
DQM2
IC701 KM416S1020C
IC702 KM416S1020C
VDD DQ0 DQ1 VSSQ DQ2 DQ3 VDDQ DQ4 DQ5 VSSQ DQ6 DQ7 VDDQ LDQM WE CAS RAS CS A11 A10 A0 A1 A2 A3 VDD
VSS DQ15 DQ14 VSSQ DQ13 DQ12 VDDQ DQ11 DQ10 VSSQ DQ9 DQ8 VDDQ N.C UDQM CLK CKE N.C A9 A8 A7 A6 A5 A4 VSS
MD0 MD1 MD2 MD3 MD4 MD5 MD6 MD7
MD15 MD14 MD13 MD12 MD11 MD10 MD9 MD8
MD16 MD17 MD18 MD19 MD20 MD21 MD22 MD23
MD31 MD30 MD29 MD28 MD27 MD26 MD25 MD24
MB10 MB0 MB1 MB2 MB3
MB9 MB8 MB7 MB6 MB5 MB4
DQM0 WEB CASB RASB DQM2
CKEB MCLK DQM0 DQM1 WEB CASB RASB DQM2
CKEB MCLK DQM1
MB[0..10]
R703 8P4R-22
MA8 MA9 MA10
MB8 MB9 MB10
R704 8P4R-22
MA4 MA5 MA6 MA7
MB4 MB5 MB6 MB7
R705 8P4R-22
MA0 MA1 MA2 MA3
MB0 MB1 MB2 MB3
MA[0..10]
Title
20.1" LCD TV
Size A4
Document Number
FRAME BUFFER BLOCK
Rev V0.1
Date: Monday, October 08, 2001
Sheet 7 of 11



Title	20.1" LCD TV	
Size A4	Document Number LVDS	Rev V0.1
Date: Monday, October 08, 2001	Sheet 8 of 11	


CN21M
Harness 10Pin
N.C
VCC
SCL
SDA
SAS
N.C
SIF
CVBS
VCC
AUDIO
5Vcc
SIF_IN
TV_CVBS
SCL
SDA
AV_RESET
L201
10uH
C202
100nF
C203
100pF
C201
10uF/16V
R201
100
R203
100
R202
1K
R204
47K
C204
470nF
R205
10K
IC201
MSP3410G
STANDBYQ
ADR_SEL
D_CTR_OUT0
D_CTR_OUT1
NC
AUD_CL_OUT
TP
XTAL_OUT
XTAL_IN
TESTEN
ANA_IN2+
ANA_IN-
ANA_IN1+
AVSUP
I2C_CL
I2C_DA
I2S_CL
I2S_WS
I2S_DA_OUT
I2S_DA_IN1
ADR_DA
ADR_WS
ADR_CL
DVSUP
DVSS
I2S_DA_IN2
RESETQ
DACA_R
DACA_L
VREF2
DACM_R
DACM_L
DACM_SUB
ASG3
SC2_OUT_R
SC2_OUT_L
VREF1
SC1_OUT_R
SC1_OUT_L
CAPL_A
AHVSUP
CAPL_M
AVSS
MONO_IN
VREFTOP
SC1_IN_R
SC1_IN_L
ASG1
SC2_IN_R
SC2_IN_L
ASG2
SC3_IN_R
SC3_IN_L
ASG4
SC4_IN_R
SC4_IN_L
AGNDC
AHVSS
RGB_SW
C206
100pF
C208
6pF
X201
18.432MHz
C210
6pF
R208
4.7K
C212
56pF
C214
56pF
C216
56pF
L206
10uH
C221
10uF/16V
C219
100nF
C220
100pF
C205
1nF
MAIN_R
MAIN_L
C207
1nF
R209
100
R210
100
C209
470nF
C211
470nF
R212
100
R213
100
C213
470nF
C215
470nF
C217
10uF/16V
C218
10uF/16V
L207
10uH
8Vcc
C222
10uF/16V
C223
100pF
C224
100nF
L202
EF-1T2012-330JT
L203
EF-1T2012-330JT
R206
47K
R207
47K
JA202
PJ6054B
CVBS_OUT
L204
EF-1T2012-330JT
L205
EF-1T2012-330JT
R211
47K
R214
47K
TV_R_OUT
TV_L_OUT
C225
470nF
C228
10uF/16V
C229
100nF
C226
10uF/16V
C227
100nF
L208
EF-1T2012-330JT
L209
EF-1T2012-330JT
SC1_R_IN
SC1_L_IN
R215
470
R216
470
C230
470nF
C233
470nF
C234
330pF
C235
330pF
C231
470nF
C232
470nF
C236
330pF
C237
330pF
R217
470
R218
470
C242
470nF
C243
470nF
C244
330pF
C245
330pF
R221
470
R222
470
L214
EF-1T2012-330JT
L215
EF-1T2012-330JT
JA302
PJ6054B
RCA_CVBS2
JA301B
PMJ014
L211
EF-1T2012-330JT
L213
EF-1T2012-330JT
RCA_CVBS1
C238
470nF
C239
470nF
R219
470
R220
470
L210
EF-1T2012-330JT
L212
EF-1T2012-330JT
JA203
PPJ35G
C240
330pF
C241
330pF
Title
20.1" LCD TV
Size
A3
Document Number
SOUND BLOCK
Rev
V0.1
Date: Monday, October 08, 2001
Sheet 9 of 11



Title	20.1" LCD TV	
Size A	Document Number SOUND AMP	Rev V0.1
Date: Monday, October 08, 2001	Sheet 10 of 11	

6. General Specification

TVL-151N (NTSC System)

(1) Optical specification

Panel type : Active matrix colour TFT LCD

Display size : 15.1” (38 Cm) diagonal

Display colour : 16,777,216 colors

Pixel pitch : 0.3 mm(H) x 0.3 mm(W)

Resolution : 1024 x 768(XGA)

Back light : 4 CCFL lamps

Contrast ratio : 350 : 1(Typ)

Brightness : 400 Cd/m^2(Typ)

Viewing angle : 45/45 degree(Up/Down), 60/60 degree(Left/Right)

(2) Electrical specification

PC signal input : Analog RGB input(0.714 Vp-p, 75 Ohms)

Video input : 1 Vp-p, 75 Ohms

Audio input : 500 mVrms, 10 Kohms

Television System : NTSC - M, PAL - M/N

TUNER : Frequency Synthesizer

Receving Channel : VHF 2~13 CH,UHF 14~69CH, CATV 113 CH
(TOTAL 181 CH)

TV Stereo Sound(MTS) : STEREO, SAP, MONO

Surround System : ON/OFF

Closed Captions/ V-CHIP(Option)

Sound Speaker output : 1.5W x 2 stereo (Surround)

Power supply : AC/DC adapter

- AC 100V – 265V, 5A input

(3) Mechanical Specification

Dimension : 384mm x 377mm x 57mm(WxHxD)

Net Weight : 4.6 Kg

Gross weight : 5.5 Kg

Physical Rotation : 30 degree(Up), 5 degree(Down)

(4) Plug & Play : DDC-1/2B

(5) **In/Out Terminals**

- PC in :15 pin D-sub terminal
- Antenna in : 75 Ohm unbalanced DIN jack
- Audio/Video Out : RCA type phone jack
- Y/C video in : SVHS terminal
- Composite video in : RCA type phone jack
- Audio in(L,R) : RCA type phone jack
- PC sound input : Stereo Headphone jack

(6) Remote Controller

- Power
- Channel Up(Menu Up)
- Channel Down(Menu Down)
- Volume Up(Menu Right)
- Volume Down(Menu Left)
- Source Select(Enter with Menu mode)
- Digit entry keys(0 – 9)
- Menu
- Mute
- PC input select
- TV input select
- VIDEO input select
- SVHS input select
- Factory mode(available only in service remote controller)

(7) Menu OSD

- Picture
  - Brightness
  - Contrast
  - Color(invalid at PC input mode)
  - Sharpness(invalid at PC input mode)
  - Tint(invalid at PC input mode ,NTSC only)

- Sound
  - Bass
  - Treble
  - Balance
  - MTS

- Geometry(valid only at PC input mode)
  - H-position
  - V-position
  - H-size
  - V-size
  - Auto position
- Function
  - Tracking(valid only at PC input mode)
    - Auto Tracking
    - Clock Adjust
    - Phase Adjust
  - Information
  - Tuning(valid only at TV input mode)
    - Air/CAtv
    - Auto Tuning
    - Manual Tuning
  - Caption
    - CAPTION : ON/OFF
    - MODE : CAPTION/TEXT
    - CHANNEL : 1/2
    - FIELD : 1/2

  - V-CHIP
    - V-CHIP LOCK : ON
    - TV GUIDELINE
    - MPAA RATING]
    - CHAGE PIN

TVL-151M(PAL System)

(1) Optical specification

Panel type : Active matrix colour TFT LCD

Display size : 15.1" (38 Cm) diagonal

Display colour : 16,777,216 colours

Pixel pitch : 0.3 mm(H) x 0.3 mm(W)

Resolution : 1024 x 768(XGA)

Back light : 4 CCFL lamps

Contrast ratio : 350 : 1(Typ)

Brightness : 400 Cd/m^2(Typ)

Viewing angle : 45/45 degree(Up/Down), 60/60 degree(Left/Right)

(2) Electrical specification

PC signal input : Analog RGB input(0.714 Vp-p, 75 Ohms)

Video input : 1 Vp-p, 75 Ohms

Audio input : 500 mVrms, 10 Kohms

TV Colour standard : PAL, SECAM(A/V NTSC)

TV Sound standard : B/G, I, D/K

TV Stereo Sound : Automatic German Stereo & NICAM digital stereo

Sound Speaker output : 1.5W x 2 stereo (Surround)

Power supply : AC/DC adapter

- AC 100V – 265V, 5A input

(3) Mechanical Specification

Dimension : 384mm x 377mm x 57mm(WxHxD)

Net Weight : 4.6 Kg

Gross weight : 5.5 Kg

Physical Rotation : 30 degree(Up), 5 degree(Down)

(4) Plug & Play : DDC-1/2B

(5) **In/Out Terminals**

- PC in :15 pin DSUB terminal
- Antenna in : 75 Ohm unbalanced DIN jack
- Audio/Video In/Out : 21 pin SCART terminal
- Y/C video in : SVHS terminal
- Composite video in : RCA type phone jack
- Audio in(L,R) : RCA type phone jack
- Audio line out(L,R) : RCA type phone jack
- PC sound input : Stereo Headphone jack

(6) Remote Controller

- Power
- Channel Up(Menu Up)
- Channel Down(Menu Down)
- Volume Up(Menu Right)
- Volume Down(Menu Left)
- Source Select(Enter with Menu mode)
- Digit entry keys(0 – 9)
- Menu
- Mute
- PC input select
- TV input select
- VIDEO input select
- SVHS input select
- Factory mode(available only in service remote controller)

(7) Menu OSD

- Picture
  - Brightness
  - Contrast
  - Colour(invalid at PC input mode)
  - Sharpness(invalid at PC input mode)
  - Tint(invalid at PC input mode ,NTSC only)
- Sound
  - Bass
  - Treble
  - Balance
  - MTS

- Geometry(valid only at PC input mode)
  - H-position

- V-position
- H-size
- V-size
- Auto position

- Function
  - Tracking(valid only at PC input mode)
    - Auto Tracking
    - Clock Adjust
    - Phase Adjust
  - Information
  - Tuning(valid only at TV input mode)
    - Sort
    - Auto tune
    - Manual Tune
    - Fine Tune
    - Ch. Skip
    - Colour system
    - Sound System

TVL-201N (NTSC System)

(1) Optical specification

Panel type : Active matrix color TFT LCD

Display size : 20.1" (51 Cm) diagonal

Display color : 16,777,216 colors

Pixel pitch : 0.6375 mm(H) x 0.6375mm

Resolution : 640 x 480(VGA)

Back light : 6 CCFL lamps

Contrast ratio : 400 : 1(Typ)

Brightness : 400 Cd/m^2(Typ)

Viewing angle : 55/65 degree(Up/Down), 70/70 degree(Left/Right)

(2) Electrical specification

PC signal input : Analog RGB input(0.714 Vp-p, 75 Ohms)

Video input : 1 Vp-p, 75 Ohms

Audio input : 500 mVrms, 10 Kohms

Television System : NTSC - M, PAL - M/N

TUNER : Frequency Synthesizer

LNA(Low Noise Amp) : ON / OFF

Receving Channel : VHF 2~13 CH,UHF 14~69CH, CATV 113 CH
(TOTAL 181 CH)

TV Stereo Sound(MTS) : STEREO, SAP, MONO

Surround System : ON/OFF

Closed Captions/ V-CHIP(Option)

Sound Speaker output : 3W x 2 stereo (Surround)

Power supply : AC/DC adapter

- AC 100V – 265V, 7A input

(3) Mechanical Specification

Dimension : 513mm x 463mm x 67mm(WxHxD : Without Speaker)
654mm x 463mm x 67mm(WxHxD : With Speaker)

Net Weight : **** Kg

Gross weight : **** Kg

Physical Rotation : 30 degree(Up), 5 degree(Down)

(4) Plug & Play : DDC-1/2B

(5) **In/Out Terminals**

- PC in :15 pin D-sub terminal
- Antenna in : 75 Ohm unbalanced F-Connector
- Audio/Video Out : RCA type phone jack
- Y/C video in : SVHS terminal
- Composite video in : RCA type phone jack
- Component (Y,Cb,Cr)video in : RCA type phone jack
- Audio in(L,R) : RCA type phone jack
- PC sound input : Stereo Headphone jack

(6) Remote Controller

- Power
- Channel Up(Menu Up)
- Channel Down(Menu Down)
- Volume Up(Menu Right)
- Volume Down(Menu Left)
- Source Select(Enter with Menu mode)
- Digit entry keys(0 – 9)
- Menu
- Mute
- PC input select
- TV input select
- VIDEO input select
- SVHS input select
- Factory mode(available only in service remote controller)

(7) Menu OSD

- Picture
  - Brightness
  - Contrast
  - Color(invalid at PC input mode)
  - Sharpness(invalid at PC input mode)
  - Tint(invalid at PC input mode ,NTSC only)

- Sound
  - Bass
  - Treble
  - Balance
  - MTS

- Geometry(valid only at PC input mode)
  - H-position
  - V-position
  - H-size
  - V-size
  - Auto position
- Function
  - Tracking(valid only at PC input mode)
    - Auto Tracking
    - Clock Adjust
    - Phase Adjust
  - Information
  - Tuning(valid only at TV input mode)
    - Air/CATV
    - Auto Tuning
    - Manual Tuning
    - LNA : ON/OFF
  - Caption
    - CAPTION : ON/OFF
    - MODE : CAPTION/TEXT
    - CHANNEL : 1/2
    - FIELD : 1/2

  - V-CHIP
    - V-CHIP LOCK : ON
    - TV GUIDELINE
    - MPAA RATING]
    - CHAGE PIN

TVL-201M(PAL System)

(1) Optical specification

Panel type : Active matrix colour TFT LCD

Display size : 20.1” (51 Cm) diagonal

Display colour : 16,777,216 colours

Pixel pitch : 0.6375 mm(H) x 0.6375 mm

Resolution : 640 x 480(VGA)

Back light : 6 CCFL lamps

Contrast ratio : 400 : 1

Brightness : 400 Cd/m^2

Viewing angle : 55/65 degree(Up/Down), 70/70 degree(Left/Right)

(2) Electrical specification

PC signal input : Analog RGB input(0.714 Vp-p, 75 Ohms)

Video input : 1 Vp-p, 75 Ohms

Audio input : 500 mVrms, 10 Kohms

TV Colour standard : PAL, SECAM(A/V:NTSC)

TV Sound standard : B/G, I, D/K

TV Stereo Sound : Automatic German Stereo & NICAM digital stereo

Sound Speaker output : 3W x 2 stereo

Power supply : AC/DC adapter

- AC 100V – 265V, 7A input

(3) Mechanical Specification

Dimension : 513mm x 463mm x 67mm(WxHxD : Without Speaker)
654mm x 463mm x 67mm(WxHxD : With Speaker)

Net Weight : **** Kg

Gross weight : **** Kg

Physical Rotation : 30 degree(Up), 5 degree(Down)

(4) Plug & Play : DDC-1/2B

(5) **In/Out Terminals**

- PC in :15 pin D-sub terminal
- Antenna in : 75 Ohm unbalanced DIN jack
- Audio/Video In/Out : 21 pin SCART terminal
- Y/C video in : SVHS terminal
- Composite video in : RCA type phone jack
- Component (Y,Cb,Cr)video in : RCA type phone jack
- Audio in(L,R) : RCA type phone jack
- Audio line out(L,R) : RCA type phone jack
- PC sound input : Stereo Headphone jack

(6) Remote Controller

- Power
- Channel Up(Menu Up)
- Channel Down(Menu Down)
- Volume Up(Menu Right)
- Volume Down(Menu Left)
- Source Select(Enter with Menu mode)
- Digit entry keys(0 – 9)
- Menu
- Mute
- PC input select
- TV input select
- VIDEO input select
- SVHS input select
- Factory mode(available only in service remote controller)

(7) Menu OSD

- Picture
  - Brightness
  - Contrast
  - Colour(invalid at PC input mode)
  - Sharpness(invalid at PC input mode)
  - Tint(invalid at PC input mode ,NTSC only)
- Sound
  - Bass
  - Treble
  - Balance

- MTS

- Geometry(valid only at PC input mode)
  - H-position
  - V-position
  - H-size
  - V-size
  - Auto position
- Function
  - Tracking(valid only at PC input mode)
    - Auto Tracking
    - Clock Adjust
    - Phase Adjust
  - Information
  - Tuning(valid only at TV input mode)
    - Sort
    - Auto tune
    - Manual Tune
    - Fine Tune
    - Ch. Skip
    - Colour system
    - Sound System

7. Troubleshooting 1

If you have a problem setting up or using your LCD monitor, you may be able to solve it yourself. Before contacting customer service, try the suggested actions that are appropriate to your problem.

What you see...	Suggested Actions	Reference
Screen is blank and power indicator is off	● Ensure that the power cord is firmly connected and the LCD monitor is on.	Connecting a PC, See the manual
“CHECK CABLE OR SIGNAL” message	● Ensure that the signal cable is firmly connected to the PC or video sources. ● Ensure that the PC or video sources are turned on.	Connecting a PC, TV or VCR, See the manual
“INVALID MODE” message	● Check the maximum resolution and the frequency of the video adaptor. ● Compare these values with the data in the Display Modes Timing Chart.	PC Stable Adjustment, APPENDIX D:Display Modes See the manual
The image is too light or too dark	● Adjust the Brightness and Contrast.	BRIGHTNESS, CONTRAST. See the manual
Horizontal bars appear to flicker, jitter or shimmer on the image	● Adjust the Clock function. ● Auto Tracking will clear it automatically.	PC Stale Adjustment. See the manual
Vertical bars appear to flicker, jitter or shimmer on the image.	● Adjust the Phase function and then adjust the Clock function. ● Auto Tracking will clear it automatically.	
Screen is blank and power indicator light is steady amber or blinks every 0.5 or 1 seconds	● The monitor is using its power management system. ● Move the computer’ s mouse or press a key on the keyboard	APPENDIX A : Power Saver, See the manual
Image is not stable and may appear to vibrate	● Auto tracking will clear it automatically ● Check that the display resolution and frequency from your PC or video board is an available mode for your monitor. On your computer check : **Control Panel, Display, Settings**	PC Stable Adjustment, See the manual
	● Horizontal frequency ● Vertical frequency ● Maximum refresh rate	31 KHz - 69KHz 56Hz - 85Hz 1024 x 768 @85Hz
Image is not centered on the screen.	● Auto Position will set the best position automatically ● Adjust the horizontal and vertical position.	AUTO POSITION, H-POSITION, V-POSITION, See the manual

7. Troubleshooting 2

Problem	Suggested Actions	Reference
No sound	● Ensure that the audio cable is firmly connected to both the audio-in jack on your monitor and the audio-out jack on your sound card.	Connecting a PC, TV or VCR, See the manual
	● Check the volume level	Adjusting the Sound settings, See the manual
Sound level is too low	● Check the volume level	
	● If the volume is still too low after turning the control to its maximum, check the volume control on the computer sound card or software program.	Refer to your computer, sound card or software documentation.
Sound is too high pitched or too low pitched	● Adjust the Treble and Bass to appropriate level.	Adjusting the Sound Settings, See the manual
TV signal is not received	● Ensure that the antenna cable is firmly connected to the VHF/UHF jack.	Conncting to watch TV or VCR, See the manual
	● Check “Channel Memory” and make sure you choose the correct channel system. (PAL Model)	Channel Memory, See the manual
	● Select “Auto Tuning” to configure the channel system automatically.(PAL Model)	
	● Check AIR/CATV is correctly selected on screen display menu. (NTSC Model)	Selecting Broadcast Source, See the manual

8. 15.1" TFT LCD TV Parts List

Date : 2002. 2. 26

NO	Spec	Pak'	Usa'	Location No	etc
	ASS'Y, PACKING				
1	MANUAL, INSTRUCTION		1		
2	REMOCON ASS'Y, PAL BLACK		1		
3	PACKING CASE, B골 SK*K180*K180		1		
4	HANDLE, NYLON		1		
5	HANDLE BRACKET, NYLON		1		
6	PACKING CASE, B골 K180*K180		1		
7	CUSHION(TOP), E.P.S #20 60배		1		
8	CUSHION(BOTTOM), E.P.S #20 60배		1		
9	SET COVER, VINYL		1		
10	DC ADAPTER, 12V 5A		1		
11	POWER CABLE		1		
12	15PIN D-SUB CABLE		1		
13	BATTERY		2		
14	WARRANTY CARD		1		
	ASS'Y, STAND				
1	STAND FRAME, E.G.I(t=2.0mm)	NATURAL	1		
2	STAND LEG, ABS HF-380 #15951	SILVER	1		
3	SCREW STAND LEG	BLACK	4		
4	HINGE(L), KKH1T201		1		
5	SCREW HINGE(L), M4+10	BLACK	2		
6	HINGE(R), KKH1T202		1		
7	SCREW HINGE(R), M4+10	BLACK	2		
8	STAND COVER(FRONT), ABS HF-380 #15951	SILVER	1		
9	STAND COVER(REAR), ABS HF-380 #15951	SILVER	1		
10	SCREW STAND, KTB4+12G	BLACK	2		
11	SPONGE, RUBBER(t=2.0mm 16MM)	WHITE	2		
12	BOTTOM FRAME, E.G.I(t=1.0mm)	NATURAL	1		
13	SCREW BOTTOM FRAME, KTB4+12G	BLACK	4		
14	SPONGE, RUBBER(t=2.0mm 20MM)	WHITE	4		
15	SCREW, KTB4+12G	BLACK	8		
	ASS'Y, REAR COVER				
1	REAR COVER, ABS GP35 #130035		1		
2	PAINT, TS-519S				
3	SCREW, KTB4+12G	BLACK	5		
4	TUNER PCB ASS'Y(PAL)		1		
5	SCREW, KTW3+8G		3		
6	SCREW, KTB4+12G	BLACK	8		

NO	Spec	Pak'	Usa'	Location No	etc
7	STAND COVER, ABS GP35 #130035		1		
8	SCREW STAND COVER, KTB4+12G	BLACK	4		
9	AV TERMINAL SHEET, PC(t=0.3mm)	GRAY	1		
10	MODEL NAME PLATE, PC(t=0.3mm)	GRAY	1		
	ASS'Y, FRONT PANEL				
1	FRONT PANEL ASS'Y, KKY1T201ZA2ZA1		1		
2	FRONT ASS'Y, KKY1T201ZA2A1		1		
3	FRONT PAINT, KKY1T201ZA2		1		
4	FRONT, ABS HF-380 #15951		1		
5	PAINT, TS-529S-Y				
6	PAINT, TS-501S				
7	MASKING SHEET, PAPER TAPE		1		
8	WINDOWS FILTER, ACRYL 855M #41791		1		
9	LED PCB ASS'Y		1		
10	SCREW, KTW3+8G	BLACK	2		
11	KNOB ASS'Y, KBT1M202ZA1		1		
12	KNOBE, ABS HF-380 #15951	WHITE	1		
13	CONTROL PCB ASS'Y		1		
14	SCREW, KTW3+8G	BLACK	3		
15	SCREW, KTB4+12G	BLACK	2		
16	SPEAKER	1.5W	2		
17	SCREW, KTB4+12G	BLACK	8		
18	LCD PANEL, LC151X01-A3(15.1INCH)	400cd	1		
19	SHIELD CASE, E.G.I(t=1.0)	NATURAL	1		
20	MAIN PCB ASS'Y(PAL)				
21	SCREW, KTW3+8G		8		
22	SCREW, KTB4+12G		10		
23	EMI SPONGE, 10X70X5(양면 TAPE)		1		
24	EMI SPONGE, 10X70X10(양면 TAPE)		1		
25	AV TER. BRACKET, ABS GP35 #130035		1		
26	SCREW, M3+6G(삼각머리)		3		
27	INVERTER PCB ASS'Y		1		
28	SCREW, KTW3+8G		2		
29	EMI SHIELD CASE, KKC1T202		1		
30	EMI BRACKET, KKC1T203		1		
31	SCREW EMI SHIELD CASE, KTB3+4G		6		
32	HARNESS, SPEAKER / 4Pin	SPEAKER	1		11/26
33	LCD CABLE, 151M 110mm	LCD	1		11/26
34	INVERTER CABLE, 10Pin-6Pin 130mm	INVERTER	1		11/26
	PCB ASS'Y, MAIN TVL_151M (SMD)				
1	CHIP RES', 1/10W, 1.3K OHM J	1608	1	R015	

NO	Spec	Pak'	Usa'	Location No	etc
2	CHIP RES', 1/10W, 10 OHM J	1608	3	R360,R363,R366	
3	CHIP RES', 1/10W, 100 OHM J	1608	27	R005,R008,R016,R017,R201,R203,R209,R210,R212,R213,R302,R303,R304,R305,R306,R326,R335,R339,R601,R611,R612,R901,RX01,RX02,R375	
				R606,R614	
4	CHIP RES', 1/10W, 180K OHM J	1608	2	R252,R257	
5	CHIP RES', 1/10W, 10K OHM J	1608	8	R004,R007,R205,R253,R254,R801,R902,R906	
6	CHIP RES', 1/10W, 150 OHM J	1608	4	R331,RX11,RX12,RX13	
7	CHIP RES', 1/10W, 15K OHM J	1608	2	R006,R301	
8	CHIP RES', 1/10W, 1K OHM J	1608	22	R001,R013,R014,R018,R019,R025,R202,R260,R261,R307,R318,R340,R369,R371,R615,R617,R618,RX05,RX06,RX07,RX14,RX15	
9	CHIP RES', 1/10W, 1M OHM J	1608	1	R620	
10	CHIP RES', 1/10W, 2.7K OHM J	1608	2	R002,R003	
11	CHIP RES', 1/10W, 22 OHM J	1608	4	R378,R379,R381,R382	
12	CHIP RES', 1/10W, 220 OHM J	1608	6	R022,R023,R333,RS01,RS02,RS03	
13	CHIP RES', 1/10W, 22K OHM J	1608	5	R009,R255,R308,R802,R907	
14	CHIP RES', 1/10W, 240 OHM J	1608	3	RX08,RX09,RX10	
15	CHIP RES', 1/10W, 24K OHM J	1608	1	RX16	
16	CHIP RES', 1/10W, 270 OHM J	1608	3	R323,R324,R325	
17	CHIP RES', 1/10W, 3.3K OHM J	1608	5	R373,RS05,RS10,RS11,RS12	
18	CHIP RES', 1/10W, 300 OHM J	1608	1	R338	
19	CHIP RES', 1/10W, 330 OHM J	1608	2	R258,R259	
20	CHIP RES', 1/10W, 33K OHM J	1608	1	R336	
21	CHIP RES', 1/10W, 4.7K OHM J	1608	12	R020,R021,R024,R208,R322,R332,R380,R383,R613,R619,RX03,RX04	
22	CHIP RES', 1/10W, 470 OHM J	1608	8	R215,R216,R217,R218,R219,R220,R329,C602	
23	CHIP RES', 1/10W, 47K OHM J	1608	11	R010,R011,R012,R204,R206,R207,R211,R214,R251,R256,R328	
24	CHIP RES', 1/10W, 510 OHM J	1608	2	R337,R903	
25	CHIP RES', 1/10W, 680 OHM J	1608	3	R327,R376,R377	
26	CHIP RES', 1/10W, 75 OHM J	1608	22	R309,R310,R311,R312,R313,R314,R315,R316,R317,R319,R320,R321,R330,R334,R341,R361,R364,R368,RS06,RS07,RS08,RS09	
27	CHIP RES' ARRAY 8P4R- 100 OHM J	1608	19	R362,R365,R367,R370,R372,R374,R602,R603,R604,R605,R607,R608,R609,R610	
				R701,R702,R703,R704,R705	
29	CHIP CAP' 16V 0.47uF Z	1608	28	C204,C209,C211,C213,C215,C225,C230,C231,C232,C233,C238,C239,C306,C311,C313,C316,C319,C321,C333,C335,C342,C399,CS03,CS04,CS05	
				CS06,CS07,CS08	
30	CHIP CAP' 16V 1uF Z	1608	5	C334,C343,C348,C353,C355	
31	CHIP CAP' 25V 0.0015uF Z	1608	5	C303,C326,C329,C338,C350	
32	CHIP CAP' 25V 0.001uF Z	1608	5	C001,C004,C205,C207,CX01	
33	CHIP CAP' 25V 0.0022uF Z	1608	1	C305	
34	CHIP CAP' 25V 0.0039uF Z	1608	1	C384	
35	CHIP CAP' 25V 0.039uF Z	1608	1	C385	
36	CHIP CAP' 25V 0.047uF Z	1608	7	C308,C314,C324,C331,C379,C380,C382	
37	CHIP CAP' 25V 0.068uF Z	1608	3	C309,C317,C322	
38	CHIP CAP' 25V 0.1uF Z	1608	90	C002,C006,C009,C202,C219,C224,C227,C229,C251,C336,C357,C358,C361,C362,C365,C366,C367,C368,C370,C371,C373,C374,C375,C376,C377	
				C386,C387,C390,C398,C603,C604,C605,C606,C607,C608,C609,C610,C611,C613,C614,C617,C619,C620,C622,C624,C625,C626,C627,C702,C703	
				C704,C705,C706,C707,C709,C710,C711,C712,C713,C714,C802,C804,C805,C808,C810,C812,C814,C816,C818,C901,C902,C904,C905,C907,C908	
				C909,C910,C911,C914,C918,C921,C923,CS01,CX04,CX06,CX09,CX10,CX11,CX12,C820	
39	CHIP CAP' 25V 0.22uF Z	1608	4	C302,C328,C339,C349	

NO	Spec	Pak'	Usa'	Location No	etc
40	CHIP CAP' 25V 100pF J	1608	9	C203,C206,C220,C223,C312,C318,C320,C323,C397	
41	CHIP CAP' 25V 10pF J	1608	3	C378,C381,C383	
42	CHIP CAP' 25V 22pF J	1608	2	C623,C628	
43	CHIP CAP' 25V 270pF J	1608	3	C345,C346,C347	
44	CHIP CAP' 25V 330pF J	1608	8	C234,C235,C236,C237,C240,C241,C389,C391	
45	CHIP CAP' 25V 33pF J	1608	2	C007,C008	
46	CHIP CAP' 25V 390pF J	1608	4	C304,C330,C337,C351	
47	CHIP CAP' 25V 47pF J	1608	1	CX08	
48	CHIP CAP' 25V 56pF J	1608	5	C212,C214,C216,CX02,CX03	
49	CHIP CAP' 25V 6pF J	1608	4	C208,C210,C307,C310	
50	CHIP COIL 10uH	2012	19	L001,L201,L206,L207,L301,L311,L312,L314,L317,L360,L361,L362,L601,L602,L603,L902,L904,LX01,LX02	
51	CHIP COIL 2.2uH	2012	8	L303,L305,L306,L308,L310,L313,L315,L316	
52	CHIP COIL CHOKE, 47uH	SMD	1	L804	
53	CHIP DIODE, DAN217	SOT-23	2	D360,D361	
54	CHIP DIODE, MBRS340	SMC	1	D801	
55	CHIP EMI FILTER, EF-1T2012-330JT	2012	31	L202,L203,L204,L205,L208,L209,L210,L211,L212,L213,L302,L304,L307,L309,L318,L319,L363,L364,L365,L366,L367,L368,L369,L370	
				LS01,LS02,LS03,LS04,LS05,L253,L254	
56	CHIP TR, BC848B	SOT-23	12	Q001,Q002,Q251,Q301,Q302,Q304,Q801,Q901,QS01,QS02,QS03,QS04	
57	CHIP TR, BC858B	SOT-23	1	Q303	
58	SMD WAFER, 125HR-20MT / 20Pin	SMD	1	CN92M	
59	IC LOGIC, 74F14FC	SOIC	1	IC362	
60	IC ADC, AD9883A	MQFP-128	1	IC360	
61	FET, FDS4435C	SOP-J8	2	IC802,IC903	
62	REGULATOR, KIA7808AF	D'PACK	1	IC805	
63	REGULATOR, KIA78DL05F	D'PACK	1	IC801	
64	REGULATOR, LD1117DT33	D'PACK	2	IC361,IC902	
65	REGULATOR, SI-8050SD	TO-263	1	IC803	
66	REGULATOR, RC1587M33	TO-263	1	IC804	
67	IC AUDIO, MSP3410G-B8	PQFP-80	1	IC201	
68	IC IMAGE SCALLER, MX88L284AEC	QFP-282	1	IC601	
69	IC LVDS, Sil164CT64 / 64Pin	TQFP	1	IC901	
70	IC AUDIO AMP, TDA8542AT / 20Pin	SOP	1	IC251	
71	IC VIDEO, VPC3230D-B3	PQFP-80	1	IC301	
72	CHIP X-TAL, 12MHz / 33pF	SMD	2	XX01,X001	
73	CHIP X-TAL, 14.31818MHz / 30pF	SMD	1	X601	
74	CHIP X-TAL, 18.432MHz / 15pF	SMd	1	X201	
75	CHIP X-TAL, 20.25MHz / 15pF	SMD	1	X301	
76	IC RESET, KIA7042	SOT-89	1	IC003	
77	IC MEMORY, HY57V161610	SOP-50	2	IC701,IC702	
78	PCB MAIN, P151AM-01	FR-4/4LAYER	1		
	PCB ASS'Y, MAIN TVL_151M (RAD)				
79	ELEC' CAP, 16V 220uF	5mm	8	C252,C801,C806,C807,C809,C811,C813,C815	

NO	Spec	Pak'	Usa'	Location No	etc
80	ELEC' CAP, 16V 22uF	5mm	7	C903,C906,C913,C919,C920,CX05,CX07	
81	ELEC' CAP, 16V 47uF	5mm	9	C254,C301,C315,C325,C327,C340,C803,C817,C819	
82	ELEC' CAP, 50V 10uF	5mm	31	C003,C005,C010,C201,C217,C218,C221,C222,C226,C228,C256,C257,C332,C356,C359,C360,C363,C364,C369,C372,C601,C612,C616,C618,C621	
				C701,C708,C912,C917,C922,CS02	
83	ELEC' CAP, 50V 1uF	5mm	2	C235,C255	
	PCB ASS'Y, MAIN TVL_151M (AXI)				
84	BEAD CORE, 3X5	3X5	5	L251,L801,L802,L803,L901	
85	FUSE, R251 010		1	F801	
	PCB ASS'Y, MAIN TVL_151M (M/I)				
86	IC VIDEO S/W, TEA6425	DIP	1	IC302	
87	IC RGB S/W, TEA5114A	DIP	1	ICS1	
88	IC MICOM, S3P863AXZZ / OTP	DIP	1	IC001	
89	IC EEPROM, 24C16	DIP	1	IC002	
90	IC TTX, SAA5264	DIP	1	ICX1	
91	IC EEPROM, 24C02	DIP	1	ICX2	
92	WAFER, 53014-0310 / 3Pin Straight	53014-0310	1	CN03M	
93	WAFER, 53014-0410 / 4Pin Straight	53014-0410	1	CN25M	
94	WAFER, 53014-0510 / 5Pin Straight	53014-0510	1	CN01M	
95	WAFER, 53014-0610 / 6Pin Straight	53014-0610	1	CN91M	
96	HARNESS, Tuner / 10Pin 300mm		1	CN21M	
97	JACK PIN, PJ6054T(SHIELD)		1	JA202	
98	JACK PHONE, PPJ35G		1	JA203	
99	JACK PIN-BLOCK, PMJ014T(SHIELD)		1	JA360	
100	JACK D-SUB, PDC013		1	JA013	
101	JACK DC, PDJ005		1	JA801	
102	JACK SCART, PMJ002		1	JAS1	
103	IC SOCKET, WSDIF-42T-1.778		1	IC001	
	PCB ASS'Y, TUNER TVL_151M (RAD)				
1	ELEC' CAP, 16V 100uF	5mm	1	CT01	
	PCB ASS'Y, TUNER TVL_151M (AXI)				
2	RES' CARBON, 1/6W 100 OHM J		2	RT01,RT02	
3	COIL, 10uH / AL03		1	LT01	
4	CERAMIC CAP, 0.1uF	CA2644	1	CT02	
5	PCB TUNER, P151AT-01	FR-1	1		
	PCB ASS'Y, TUNER TVL_151M (M/I)				
6	WAFER, 53014-1010 / 10Pin Straight	53014-1010	1	CN21T	
7	TUNER, TCPQ9091PD27D(S)	SAMSUNG	1	TU01	

NO	Spec	Pak'	Usa'	Location No	etc
	PCB ASS'Y, LED TVL_151M (AXI)				
1	CERAMIC CAP, 0.1uF J	CA2644	1	CC03	
2	RES' CARBON, 1/6W 47 OHM J	AXIAL	1	RC01	
3	RES' CARBON, 1/6W 47K OHM J	AXIAL	1	RC02	
4	RES' CARBON, 1/6W 680 OHM J	AXIAL	2	RC08, RC09	
	PCB ASS'Y, LED TVL_151M (M/I)				
5	HARNESS, LED / 5Pin 250mm	2mm	1	CN01C	
6	LED DUAL, SAM5270		1	DL01	
7	REMOCON RECIEVER, FRP-3051		1	RM01	
	PCB ASS'Y, SW TVL_151M (AXI)				
1	RES' CARBON, 1/6W 390 OHM J	AXIAL	2	RC06,RC07	
2	RES' CARBON, 1/6W 620 OHM J	AXIAL	1	RC05	
3	RES' CARBON, 1/6W 1.3K OHM J	AXIAL	1	RC04	
4	RES' CARBON, 1/6W 2.2K OHM J	AXIAL	1	RC03	
5	SW TACT, HST-0260A	5mm	7	SW01,SW02,SW03,SW04,SW05,SW06,SW07	
	PCB S/W, P151AS-01	FR-1	1		
	PCB ASS'Y, SW TVL_151M (M/I)				
6	HARNESS, SW / 3Pin 100mm	2mm	1	CN03C	

8. 20.1" TFT LCD TV Part List

NO	Spec	Pak'	Usa'	Location No	etc
	ASS'Y, PACKING				
1	MANUAL, INSTRUCTION		1		
2	REMOCON ASS'Y, PAL NEW		1		
3	PACKING CASE, B골 SK*K180*K180		1		
4	PACKING CASE, A골 SK*K180*K180				
6	PACKING CASE, B골 K180*K180		1		
7	CUSHION(TOP), E.P.S #20 60		1		
8	CUSHION(BOTTOM), E.P.S #20 60		1		
9	SET COVER, VINYL , 650*650		1		
10	DC ADAPTER, 15V 5.3A		1		
11	POWER CABLE		1		
12	15PIN D-SUB CABLE		1		
13	BATTERY		2		
14	WARRANTY CARD		1		
15	AUDIO CABLE, 2M		1		
16	SERIAL NO. LABEL				
	ASS'Y, STAND				
1	SPONGE BOTTOM , RUBBER ∮20*2t		6		
2	SPONGE STAND , RUBBER ∮16*2t		2		
3	SCREW STAND COVER FRONT , BH T4*12 BLK		2		
4	STAND COVER FRONT , ABS HF380 #15951, TS-529S-Y		1		
5	STAND COVER REAR , ABS HF380 #15951, TS-529S-Y		1		
6	SCREW HINGE(L/R)+STAND FRAME , BH M4*10 BLK		4		
7	HINGE (RIGHT)		1		
8	HINGE (LEFT)		1		
9	BOTTOM FRAME , SPC 3.0t 346*210 (250T)		1		
10	SCREW BTM FRAME+ STAND LEG , BH T4*12 BLK		6		
11	SCREW STAND FRAME+STAND LEG , BH T4*12 BLK		5		
12	STAND FRAME , SPC 3.0t 360*280 (250T, 110T)		1		
13	STAND LEG , ABS HF380 #15951, TS-529S-Y		1		
	ASS'Y, REAR COVER				
1	SCREW HINGE BKT + SHIELD CASE		2		
2	HINGE BRAKET , ABS GP35 # 130035		1		
3	SCREW TUNER COVER , BH T4*12 BLK		1		
4	TUNER COVER , ABS GP35#130035		1		
5	TUNER PCB ASS'Y		1		
6	SCREW TUNER PCB , PH T3*8		3		
7	SCREW REAR COVER , BH T4*12 BLK		10		
8	REAR COVER , ABS GP35#130035		1		
9	CONTROL SHEET , PC 0.3t		1		
10	MODEL NAME PLATE , PC 0.3t		1		
	ASS'Y, FRONT PANEL				
1	FRONT PANEL , ABS HF-380 #15951		1		
2	SCREW LED , PH T3*8		2		
3	LED PCB ASS'Y		1		
4	WINDOW FILTER , ACRYLIC 855M #41791		1		
5	SCREW LED , PH T3*8		3		
6	CONTROL PCB ASS'Y		1		
7	KNOB , ABS HF380 #15951		1		
8	SCREW KOBB + FRONT PANEL , BH T4*12 BLK		2		
9	FRONT PANEL , ABS HF-380 #15951, TS-529S-Y		1		

NO	Spec	Pak'	Usa'	Location No	etc
10	LCD FLAT CABLE, 201M 200mm	LCD	1		
11	LCD PANEL, LC201V1(20.1INCH)	400cd	1		
12	SCREW EMI , BH TAPTITE 3*4		11		
13	EMI BRAKET		1		
14	EMI SHIELD CAES		1		
15	PEM NUT 4 , 8.3 * 7 TAP3		5		
17	PEM NUT 3 , 19.8 * 7 TAP3 DP15		2		
18	PEM NUT 2 , 30.9 * 8 TAP4 DP15		1		
19	PEM NUT 3 , 33.4 * 9 TAP4 DP15		4		
20	SHIELD CASE , SECC 1.2t 517*410 (250T)		1		
21	SCREW SHIELD CASE + FR/PANEL , BH T4*12 BLK		10		
22	INVERTER PCB ASS'Y, 6632Z-2001A		1		
23	INVERTER CABLE, 12Pin-6Pin 180mm	INVERTER	1		
24	SCREW INVERTER PCB , PH T3*8		3		
25	SCREW MAIN PCB , PH T3*8		8		
26	MAIN PCB ASS'Y(PAL)		1		
27	AV TERMINAL BRAKET , ABS GP35 #130035		1		
28	SCREW AV TER BKT + SHIELD CASE , BH M3*6		3		
29	SCREW SHIELD CASE + LCD PANEL , M3*12 BLK		4		
30	ST COVER PCB ASS'Y		1		
31	SCREW CT COVER PCB , PH T3*8		2		
	ASS'Y, ST COVER				
32	STAND COVER , ABS GP35#130035		1		
33	SCREW STAND COVER , BH T4*12 BLK		4		
34	SCREW HINGE(L/R)+SHIELD CASE		8		
	ASS'Y, SPEAKER				
35	SPEAKER FRONT , HIPS HI-425TVG#1600 TS-529S-Y		2		
36	SPEAKER REAR(R) , HIPS HI-425TVG#1600 TS-529S-Y		1		
37	SPEAKER REAR(L) , HIPS HI-425TVG#1600 TS-529S-Y		1		
38	SPEAKER REAR PANEL INSERT NUT , M4 * 8*6		8		
39	SCREW , BT 4T*12 BLK		28		
40	SCREW , BT 3*8		4		
41	MAIN SPEAKER, MST-57BR20T		2		
42	TWITTER SPEAKER, MSF-2D4SB53T		2		
43	SPEAKER PCB ASS'Y		2		
44	SPEAKER WIRE, 1WIRE		2		
	PCB ASS'Y, MAIN TVL_201M (SMD)				
1	CHIP RES', 1/10W, 8.2 OHM J	1608	2	R253,R257	
2	CHIP RES', 1/10W, 10 OHM J	1608	3	R360,R363,R366	
3	CHIP RES', 1/10W, 22 OHM J	1608	5	R375,R378,R379,R381,R382	
4	CHIP RES', 1/10W, 75 OHM J	1608	30	RS06,RS07,RS08,RS09,R309,R310,R311,R312,R313,R314,R315,R316,R319,R320,R321,R330,R334,R341,R344,R345,R346,R347,R348,R349,R350,R351,R352	
				R361,R364,R368	
5	CHIP RES', 1/10W, 100 OHM J	1608	25	RX01,RX02,R005,R008,R016,R017,R201,R203,R209,R210,R212,R213,R302,R303,R304,R305,R306,R326,R335,R339,R601,R606,R614,R611R612	
6	CHIP RES', 1/10W, 150 OHM J	1608	4	RX11,RX12,RX13,R331	
7	CHIP RES', 1/10W, 220 OHM J	1608	6	RS01,RS02,RS03,R022,R023,R333	
8	CHIP RES', 1/10W, 240 OHM J	1608	3	RX08,RX09RX10	
9	CHIP RES', 1/10W, 270 OHM J	1608	3	R323,R324,R325	
10	CHIP RES', 1/10W, 300 OHM J	1608	1	R338	
11	CHIP RES', 1/10W, 330 OHM J	1608	2	R260,R261	
12	CHIP RES', 1/10W, 470 OHM J	1608	10	R215,R216,R217,R218,R219,R220,R221,R222,R329,C602	
13	CHIP RES', 1/10W, 510 OHM J	1608	1	R337	
14	CHIP RES', 1/10W, 680 OHM J	1608	3	R327,R376,R377	
15	CHIP RES', 1/10W, 1K OHM J	1608	22	R001,R013,R014,R018,R019,R025,R202,R307,R317,R318,R340,R369,R371,R615,R617,R618,RX05,RX06,RX07,RX14,RX15	
16	CHIP RES', 1/10W, 1.3K OHM J	1608	1	R015	

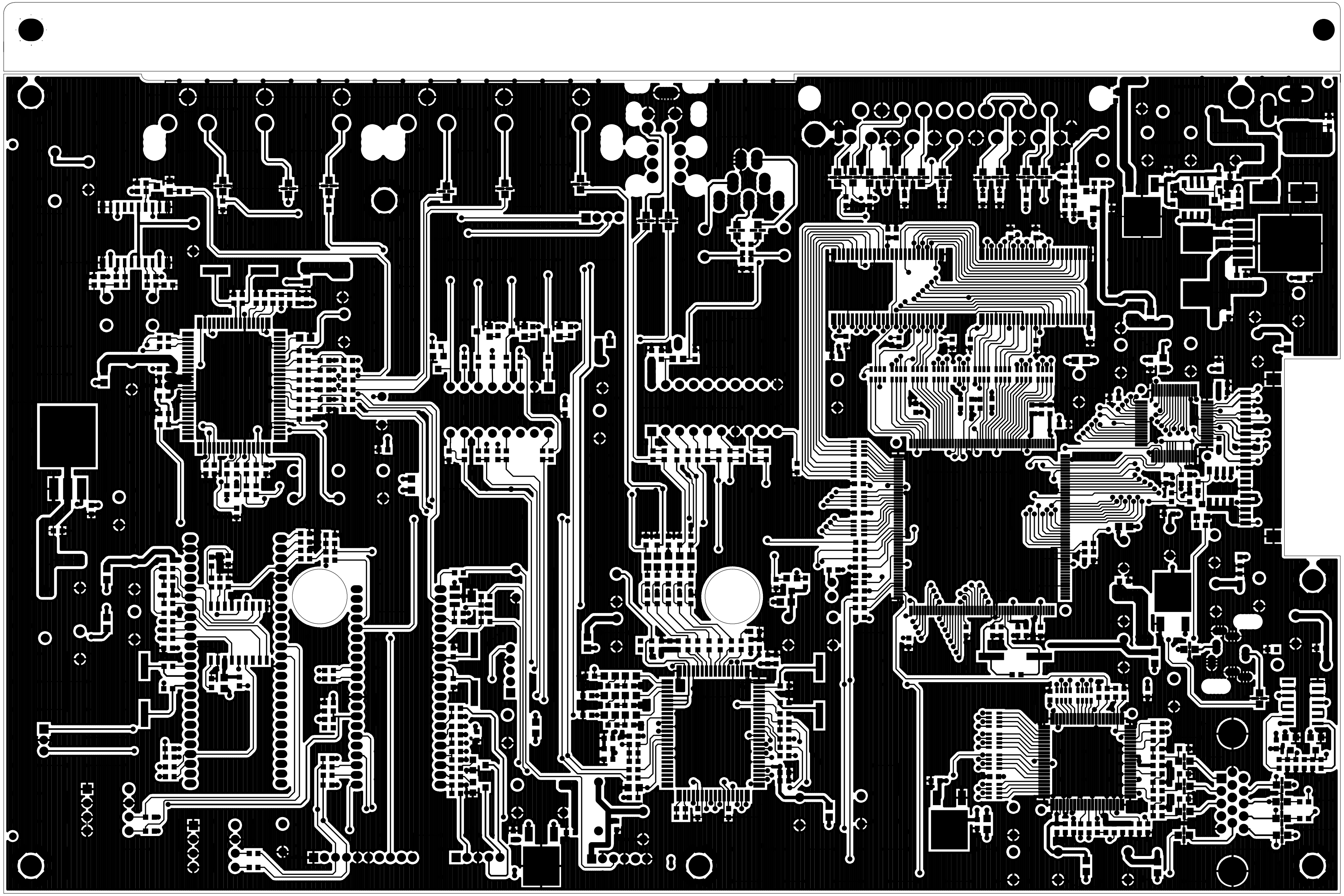
NO	Spec	Pak'	Usa'	Location No	etc
17	CHIP RES', 1/10W, 2.7K OHM J	1608	2	R002,R003	
18	CHIP RES', 1/10W, 3.3K OHM J	1608	5	R373,RS05,RS10,RS11,RS12	
19	CHIP RES', 1/10W, 4.7K OHM J	1608	17	RX03,RX04,R020,R021,R024,R208,R251,R252,R255,R256,R322,R332,R342,R380,R383,R613,R619	
20	CHIP RES', 1/10W, 10K OHM J	1608	6	R004,R007,R205,R258,R801,R906	
21	CHIP RES', 1/10W, 15K OHM J	1608	2	R006,R301	
22	CHIP RES', 1/10W, 22K OHM J	1608	5	R009,R259,R308,R802,R907	
23	CHIP RES', 1/10W, 24K OHM J	1608	2	RX16,R254	
24	CHIP RES', 1/10W, 33K OHM J	1608	1	R336	
25	CHIP RES', 1/10W, 47K OHM J	1608	9	R010,R011,R012,R204,R206,R207,R211,R214,R328	
26	CHIP RES', 1/10W, 1M OHM J	1608	1	R620	
27	CHIP RES' ARRAY 8P4R- 100 OHM J	1608	19	R362,R365,R367,R370,R372,R374,R602,R603,R604,R605,R607,R608,R609,R610,R701,R702,R703,R704,R705	
28	CHIP CAP' 16V 0.47uF Z	1608	33	CS03,CS04,CS05,CS06CS07,CS08,C204,C209,C211,C213,C215,C225,C230,C231,C232,C233,C238,C239,C242,C243,C306,C311,C313,C316,C319,C321,C333,C335	
				C342,C394,C395,C396,C399	
29	CHIP CAP' 16V 1uF Z	1608	6	C334,C343,C348,C353,C355,C358	
30	CHIP CAP' 25V 0.0015uF Z	1608	5	C303,C326,C329,C338,C350	
31	CHIP CAP' 25V 0.001uF Z	1608	7	C001,C004,C205,C207,C255,C260,CX01	
32	CHIP CAP' 25V 0.0022uF Z	1608	1	C305	
33	CHIP CAP' 25V 0.0039uF Z	1608	1	C384	
34	CHIP CAP' 25V 0.039uF Z	1608	1	C385	
35	CHIP CAP' 25V 0.047uF Z	1608	7	C308,C314,C324,C331,C379,C380,C382	
36	CHIP CAP' 25V 0.068uF Z	1608	3	C309,C317,C322	
37	CHIP CAP' 25V 0.1uF Z	1608	82	CS01,C002,CX04,CX06,C006,CX09,C009,CX10,CX11,CX12,C202,C219,C224,C227,C229,C251,C257,C261,C336,C357,C361,C362,C365,C366,C367,C368,C370	
				C371,C373,C374,C375,C376,C377,C386,C387,C390,C398,C603,C604,C605,C606,C607,C608,C609,C610,C611,C613,C614,C617,C619,C620,C622,C624,C625	
				C626,C627,C702,C703,C704,C705,C706,C707,C709,C710,C711,C712,C713,C714,C802,C804,C805,C808,C810,C812,C814,C816,C818,C820,C904,C905,C918,C921	
38	CHIP CAP' 25V 0.22uF Z	1608	4	C302,C328,C339,C349	
39	CHIP CAP' 25V 100pF J	1608	8	C203,C206,C220,C223,C312,C318,C320,C397	
40	CHIP CAP' 25V 10pF J	1608	3	C378,C381,C383	
41	CHIP CAP' 25V 22pF J	1608	2	C623,C628	
42	CHIP CAP' 25V 270pF J	1608	6	C345,C346,C347,C392A,C392,C393	
43	CHIP CAP' 25V 330pF J	1608	10	C234,C235,C236,C237,C240,C241,C244,C245,C389,C391	
44	CHIP CAP' 25V 33pF J	1608	2	C007,C008	
45	CHIP CAP' 25V 390pF J	1608	4	C304,C330,C337,C351	
46	CHIP CAP' 25V 47pF J	1608	1	CX08	
47	CHIP CAP' 25V 56pF J	1608	5	C212,C214,C216,CX02,CX03	
48	CHIP CAP' 25V 6pF J	1608	4	C208,C210,C307,C310	
49	CHIP COIL 10uH	2012	17	L001,L201,L206,L207,L301,L311,L312,L314,L317,L360,L361,L362,L601,L602,L603,LX01,LX02	
50	CHIP COIL 2.2uH	2012	10	L303,L305,L306,L308,L313,L315,L316,L323,L324,L325,	
51	CHIP COIL CHOKE, 47uH	SMD	1	L804	
52	CHIP DIODE, DAN217	SOT-23	2	D360,D361	
53	CHIP DIODE, MBRS340	SMC	1	D801	
54	CHIP EMI FILTER, EF-1T2012-330JT	2012	37	LS01,LS02,LS03,LS04,LS05,L202,L203,L204,L205,L208,L209,L210,L211,L212,L213,L214,L215,L252,L253,L302,L304,L307,L309,L310,L318,L319.L320,L321,L322	
				L363,L364,L365,L366,L367,L368,L369,L370	
55	CHIP TR, BC848B	SOT-23	13	Q001,Q002,Q251,Q301,Q302,Q304,Q305,Q801,Q901,QS01,QS02,QS03,QS04	
56	CHIP TR, BC858B	SOT-23	1	Q303	
57	SMD WAFER, GF056-50S-LSS-P2000 / 50Pin	SMD	1	CN92M	
58	IC LOGIC, 74F14FC	SOIC	1	IC362	
59	IC ADC, AD9883A	MQFP-128	1	IC360	
60	FET, FDS4435C	SOP-J8	2	IC802,IC903	
61	REGULATOR, KIA7808AF	D'PACK	1	IC805	
62	REGULATOR, KIA78DL05F	D'PACK	1	IC801	
63	REGULATOR, LD1117DT33	D'PACK	1	IC361	
64	DC-DC CONVERTOR, SI-8050SD	TO-263	1	IC803	
65	REGULATOR, RC1587M33	TO-263	1	IC804	
66	IC AUDIO, MSP3410G-B8	PQFP-80	1	IC201	
67	IC IMAGE SCALLER, MX88L284AEC	QFP-282	1	IC601	
68	IC VIDEO, VPC3230D-B3	PQFP-80	1	IC301	
69	CHIP X-TAL, 12MHz / 33pF	SMD	2	XX01,X001	

NO	Spec	Pak'	Usa'	Location No	etc
70	CHIP X-TAL, 14.31818MHz / 30pF	SMD	1	X601	
71	CHIP X-TAL, 18.432MHz / 15pF	SMd	1	X201	
72	CHIP X-TAL, 20.25MHz / 15pF	SMD	1	X301	
73	IC RESET, KIA7042	SOT-89	1	IC003	
74	IC MEMORY, HY57V161610	SOP-50	2	IC701,IC702	
75	PCB MAIN, P201AM-01	FR-4/4LAYER	1		
	PCB ASS'Y, MAIN TVL_201M (RAD)				
76	ELEC' CAP, 16V 220uF	5mm	4	C809,C811,C813,C815	
77	ELEC' CAP, 16V 22uF	5mm	4	C919,C920,CX05,CX07	
78	ELEC' CAP, 16V 47uF	5mm	7	C301,C315,C325,C327,C340,C803,C817	
79	ELEC' CAP, 25V 22uF	5mm	2	C903,C906	
80	ELEC' CAP, 25V 47uF	5mm	1	C819	
81	ELEC' CAP, 25V 220uF	5mm	7	C252,C254,C256,C259,C801,C806,C807	
82	ELEC' CAP, 50V 10uF	5mm	27	CS02,C003,C005,C010,C201,C217,C218,C221,C222,C226,C228,C262,C332,C356,C359,C360,C363,C364,C369,C372,C601,C612,C616,C618,C621,C701,C709	
83	ELEC' CAP, 50V 1uF	5mm	2	C253,C258	
	PCB ASS'Y, MAIN TVL_201M (AXI)				
84	BEAD CORE, 3X5	3X5	5	L251,L801,L802,L803,L901	
85	FUSE, R251 010		1	F801	
	PCB ASS'Y, MAIN TVL_201M (M/I)				
86	IC VIDEO S/W, TEA6425	DIP	1	IC302	
87	IC RGB S/W, TEA5114A	DIP	1	ICS1	
88	IC MICOM, S3P863AXZZ / OTP	DIP	1	IC001	
89	IC EEPROM, 24C16	DIP	1	IC002	
90	IC TTX, SAA5264	DIP	1	ICX1	
91	IC EEPROM, 24C02	DIP	1	ICX2	
92	IC AUDIO AMP, TDA1519B	SOT110	1	IC251	
93	WAFER, 53014-0310 / 3Pin Straight	53014-0310	1	CN03M	
94	WAFER, 53014-0410 / 4Pin Straight	53014-0410	1	CN25M	
95	WAFER, 53014-0510 / 5Pin Straight	53014-0510	1	CN01M	
96	WAFER, 53014-0610 / 6Pin Straight	53014-0610	1	CN91M	
97	HARNESS, Tuner / 10Pin 300mm		1	CN21M	
98	JACK PIN, PJ6054T(SHIELD)		2	JA202,JA302	
99	JACK PIN, PJ6054T-01(SHIELD)		1	JA303	
100	JACK PHONE, PPJ35G		1	JA203	
101	JACK PIN-BLOCK, PMJ014T(SHIELD)		1	JA301B	
102	JACK D-SUB, PDC013		1	JA013	
103	JACK DC, PDJ005		1	JA801	
104	JACK SCART, PMJ002		1	JAS1	
105	IC SOCKET, WSDIF-42T-1.778		1	IC001	
	PCB ASS'Y, TUNER TVL_201M (RAD)				
1	ELEC' CAP, 16V 100uF	5mm	1	CT01	
	PCB ASS'Y, TUNER TVL_201M (AXI)				
2	RES' CARBON, 1/6W 100 OHM J		2	RT01,RT02	
3	COIL, 10uH / AL03		1	LT01	
4	CERAMIC CAP, 0.1uF	CA2644	1	CT02	
5	PCB TUNER, P151AT-01	FR-1	1		
	PCB ASS'Y, TUNER TVL_201M (M/I)				
6	WAFER, 53014-1010 / 10Pin Straight	53014-1010	1	CN21T	
7	TUNER, TCPQ9091PD27D(S)	SAMSUNG	1	TU01	
	PCB ASS'Y, LED TVL_201M (AXI)				

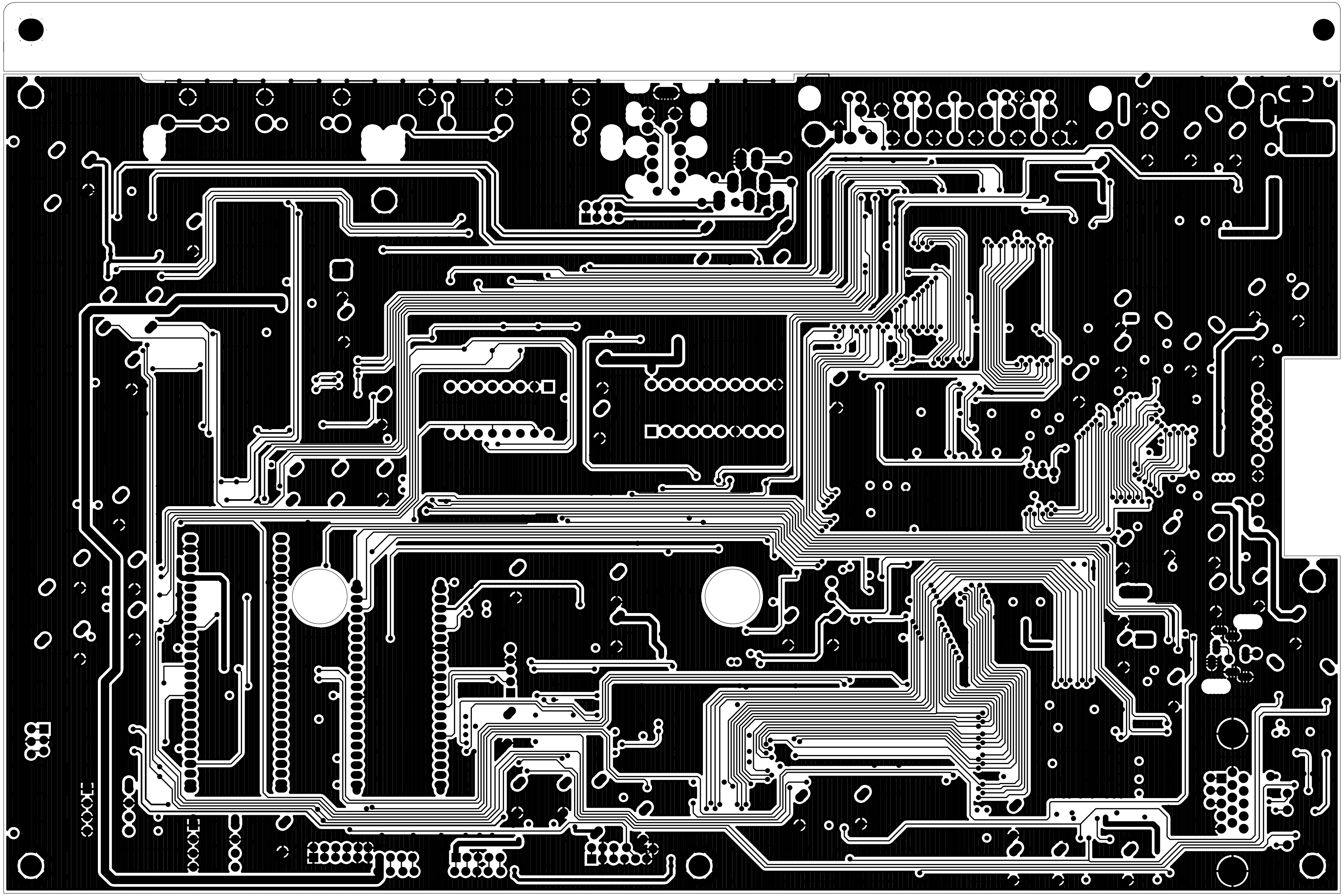
NO	Spec	Pak'	Usa'	Location No	etc
1	CERAMIC CAP, 0.1uF J	CA2644	1	CC03	
2	RES' CARBON, 1/6W 47 OHM J	AXIAL	1	RC01	
3	RES' CARBON, 1/6W 47K OHM J	AXIAL	1	RC02	
4	RES' CARBON, 1/6W 680 OHM J	AXIAL	2	RC08, RC09	
	PCB ASS'Y, LED TVL_201M (M/I)				
5	HARNESS, LED / 5Pin 500mm	500mm	1	CN01C	
6	LED DUAL, SAM5270		1	DL01	
7	REMOCON RECIEVER, FRP-3051		1	RM01	
	PCB ASS'Y, SW TVL_201M (AXI)				
1	RES' CARBON, 1/6W 390 OHM J	AXIAL	2	RC06,RC07	
2	RES' CARBON, 1/6W 620 OHM J	AXIAL	1	RC05	
3	RES' CARBON, 1/6W 1.3K OHM J	AXIAL	1	RC04	
4	RES' CARBON, 1/6W 2.2K OHM J	AXIAL	1	RC03	
5	SW TACT, HST-0260A	5mm	7	SW01,SW02,SW03,SW04,SW05,SW06,SW07	
6	PCB S/W, P151AS-01	FR-1	1		
	PCB ASS'Y, SW TVL_201M (M/I)				
7	HARNESS, SW / 3Pin 100mm	2mm	1	CN03C	
	PCB ASS'Y, SPK TVL_201M (M/I)				
1	PCB SPEAKER , P201SPK-2	FR-1	1		
2	HARNESS, SPK / 2Pin_3Wire		2	SPK1	
3	PPJ35D (SPEAKER SOCKET)		2	JAS1	
	PCB ASS'Y, ST COVER TVL_201M (M/I)				
4	HARNESS, SPK / 4Pin_220mm		1	SPK2	
5	PPJ35D (SPEAKER SOCKET)		2	JAS2,JAS3	

9. Main Printed Circuit Board

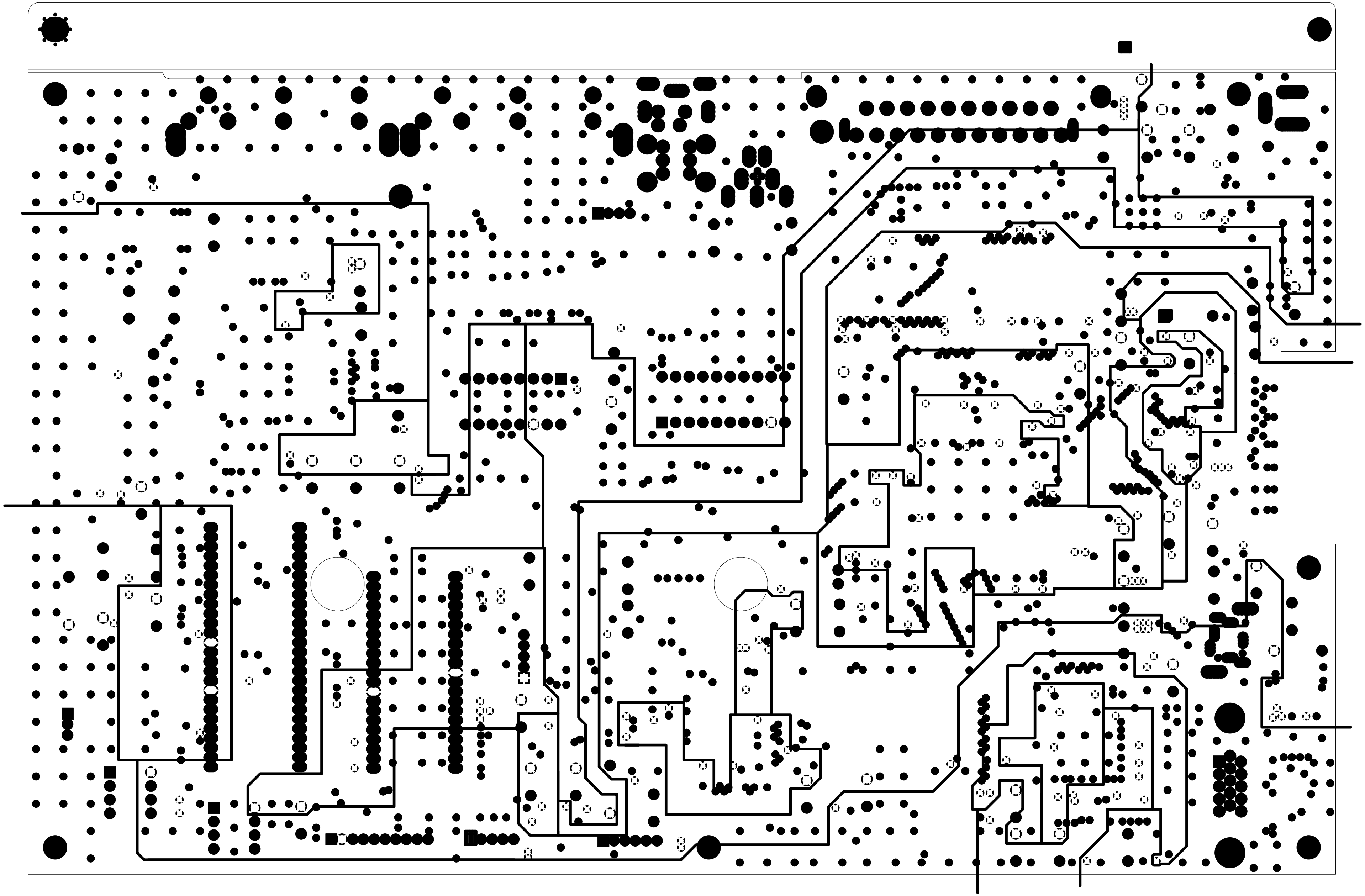
1) Top Side Pattern



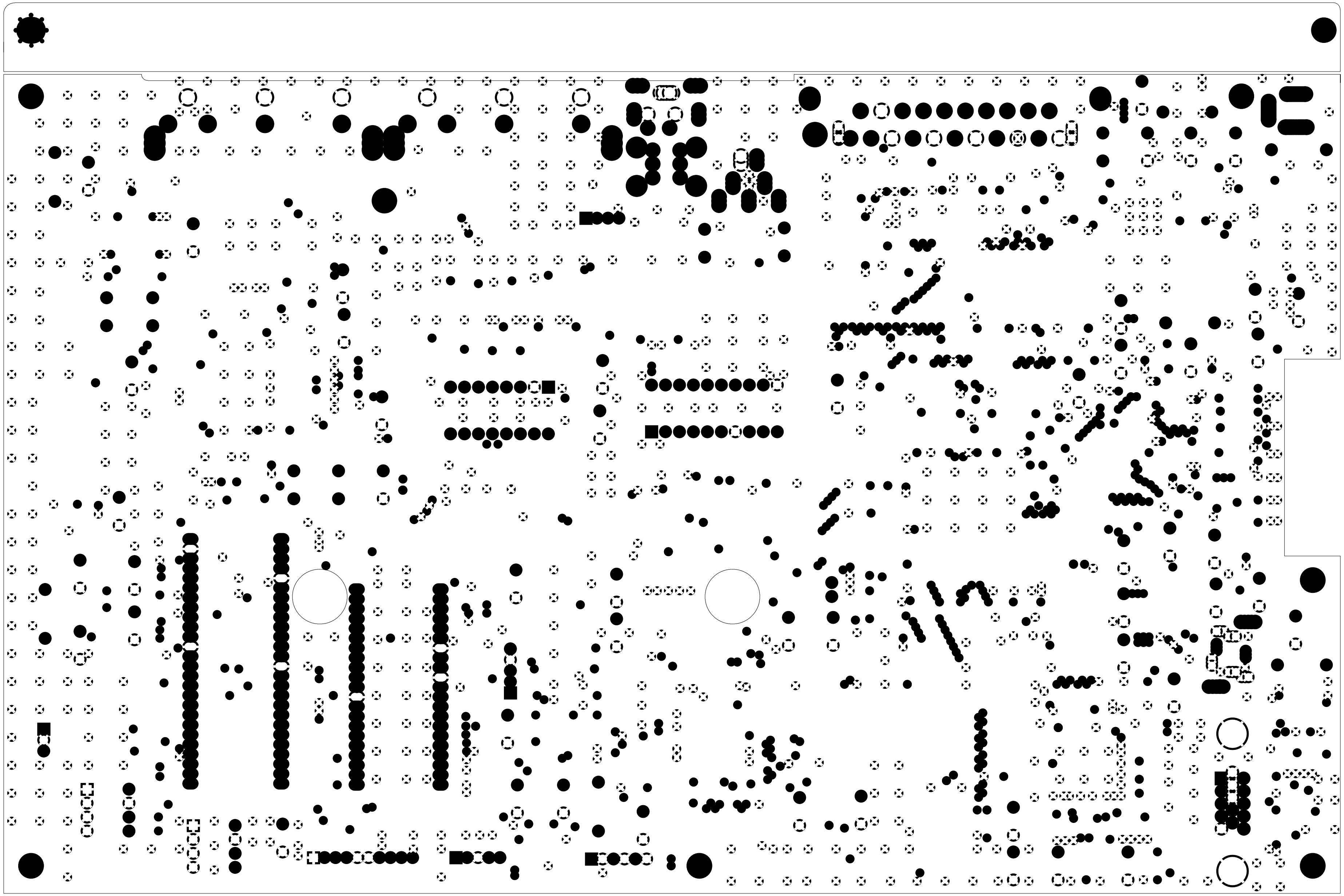
2) Bottom Side Pattern



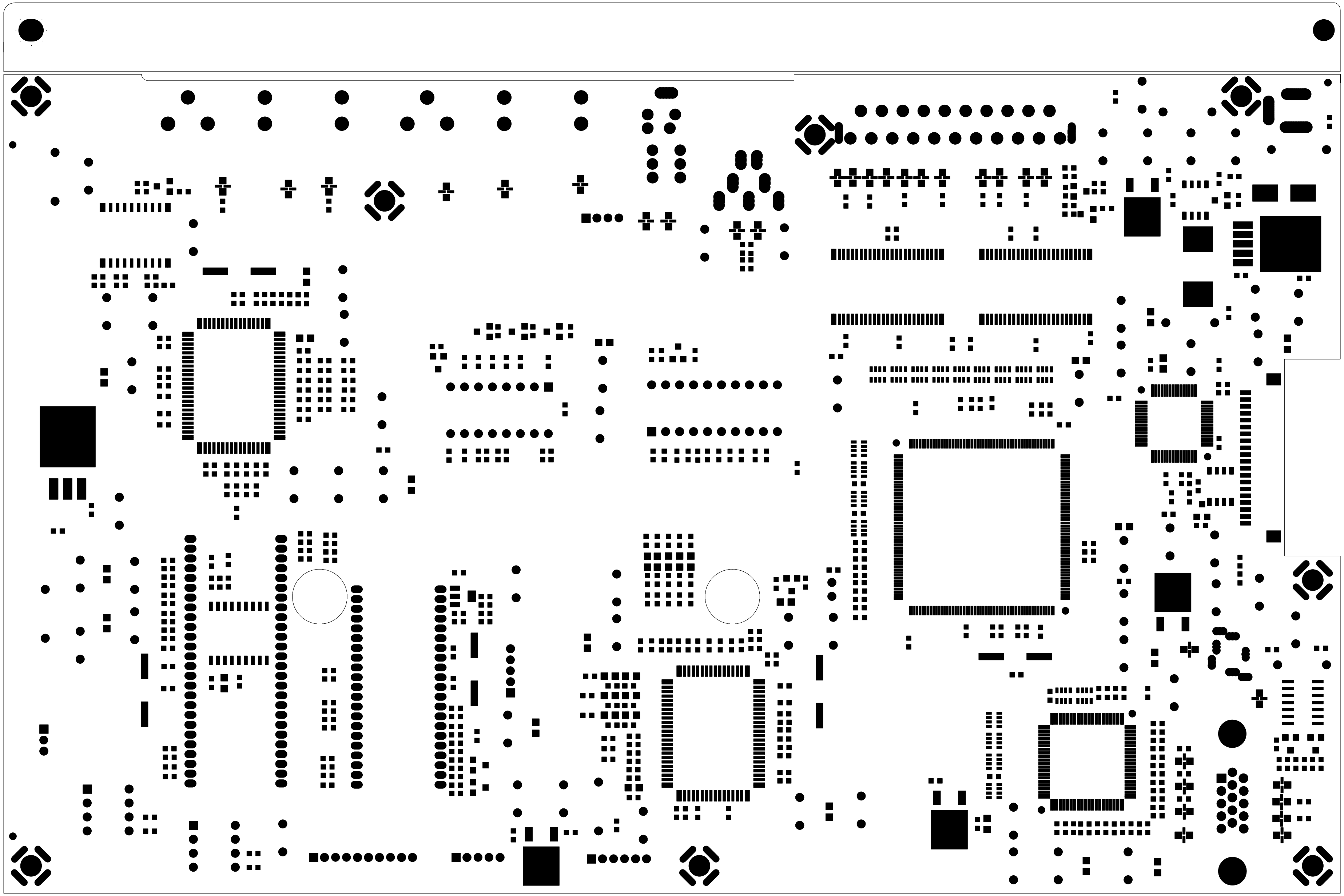
3) VCC Layer



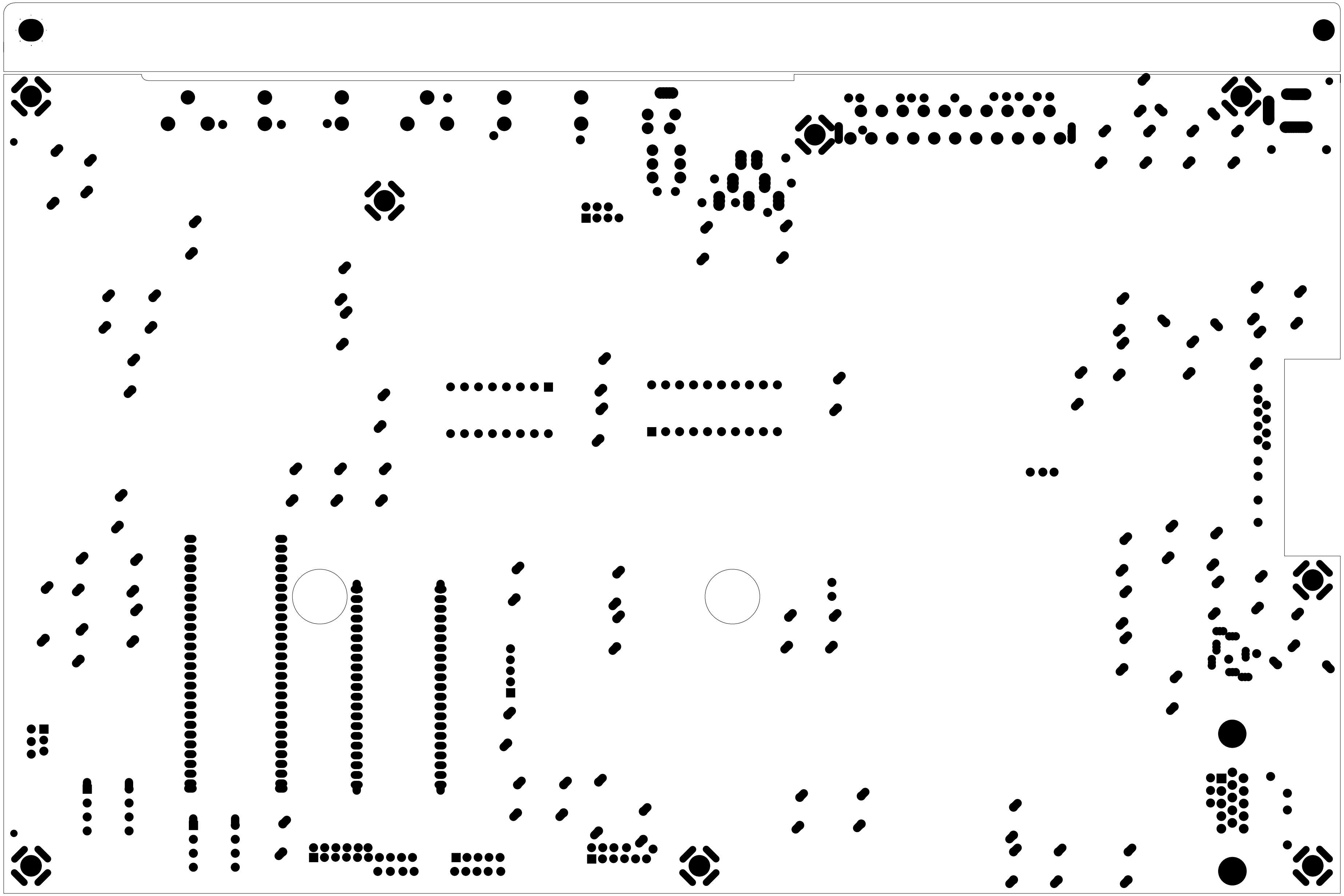
4) Ground Layer



5) Top Side Solder



6) Bottom Side Solder



7) Top Side Silk

